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**Current Progress in Obstetrics and
Gynecology**
Lecture #1—Diabetes in Pregnancy:
A Review

Curtis M. Adams, M.D.
Loren P. Petersen, M.D.

Clinicopathological Conference
Thirteen Year Old Boy With Fever
and Inguinal Lymphadenopathy

James Nielsen, M.D.
John F. Barlow, M.D.

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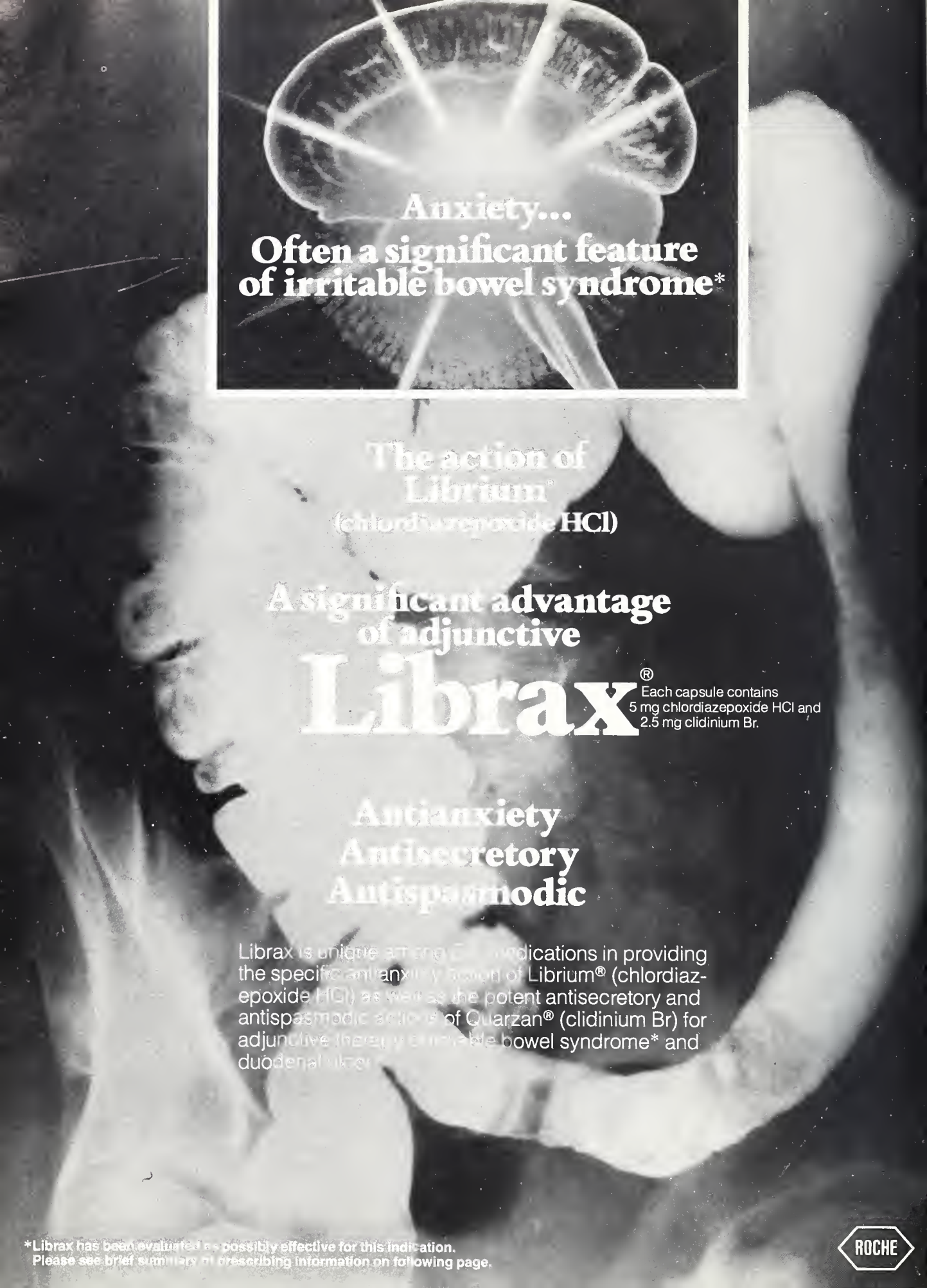


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February

The Third Annual Vail Family Practice Conference, The Mark, Vail, CO, Feb. 11-18. Category I credits. Fee: \$190. Contact: Beth Israel Hosp. Conference & Institute Program, 1818 Gaylord St., Denver, CO 80206.

Refresher Course for the Family Physician, U. of Iowa, Coll. of Med., Iowa City, IA, Feb. 14-17. AMA credits. Contact: Richard M. Caplan, M.D., Assoc. Dean for CME, U. of Iowa Coll. of Med., Iowa City, IA 52242.

Coronary Care and the Practicing Physician, St. Joseph Hosp., Omaha, NE, Feb. 15-17. 20 hrs. AMA Category I credits and prescribed AAFP credits. Contact: Div. of Con. Ed., Creighton U. School of Med., 2500 California St., Omaha, NE 68178.

Selection of Patients for Group Therapy, V.A. Hospital, Fort Meade, SD, Feb. 16. 1 elective hr. CME. Contact: Mr. Christenson, Adm.

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Asst/Chief of Staff, Fort Meade,
SD.

Rheumatology, Aspen, CO, Feb. 20-24. Contact: Off. of Postgrad. Med. Ed., U. of Colo. School of Med., 4200 E. 9th Ave., Cont. C295, Denver, CO 80262.

Dermatology, Mayo Foundation Outreach Seminar, McKennan Hosp. Aud., Sioux Falls, SD, Feb. 24-25. Category I credits. Contact: Dir. of Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101.

Fourth International Symposium on Psychopharmacology-Depression, U. of Louisville School of Med., Louisville, KY, Feb. 24-25. 11 hrs. prescribed credit. Contact: Herman Denber, M.D., P. O. Box 35260, Louisville, KY 40232.

The Eighth Annual Aspen Radiology Conference, The Aspen Institute for Humanistic Studies, Aspen, CO, Feb. 25-March 4. Category I credits. Fee: \$190. Contact: Beth Israel Hosp. Conference & Institute Program, 1818 Gaylord St., Denver, CO 80206.

March

Diabetes Management, Dakota Wesleyan U., Mitchell, SD, March 2-3. Contact: Lewis & Clark CHES, 1017 W. 5th St., Yankton, SD 57078.

Iowa Radiological Society, U. of Iowa Coll. of Med., Iowa City, IA, March 4. AMA credits. Contact: Richard M. Caplan, M.D., Assoc. Dean of CME, U. of Iowa Coll. of Med., Iowa City, IA 52242.

Third Annual Vail Psychiatry Conference, Kiandra-Talisman, Vail, CO, March 4-11. Contact: Beth Israel Hosp. Conference & Institute Program, 1818 Gaylord St., Denver, CO 80206.

First Annual Vail Cancer Conference, Lion Square Lodge, Vail, CO, March 4-11. Contact: Beth Israel Hosp., Conference & Institute Program, 1818 Gaylord St., Denver, CO 80206.

Postgraduate Medical Refresher Course, Fort Lauderdale, FL, March 6-17. Fee: \$300. 50 hrs. prescribed credit, AAFP & AMA. Contact: Mediclinics, 832 Central Med. Bldg., St. Paul, MN 55104.
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Current Progress in Obstetrics and Gynecology

A Series of 12 Lectures

Lecture #1

DIABETES IN PREGNANCY: A REVIEW

by

Curtis M. Adams, M.D.*

Loren P. Petersen, M.D.**

Prior to the discovery of insulin in 1921, pregnancy complicated by diabetes was disastrous. For the few diabetics who did conceive, the maternal mortality rate ranged from 6-45%, and the fetal death rate approached 45%.^{1,2} With the introduction of insulin, the maternal mortality rate decreased to 0.5%, a rate still twenty times higher than that for the general obstetric population.³ An improvement in fetal outcome also occurred, but was less dramatic. As late as 1949, Peel and Oakley reported a fetal mortality of 40%.⁴ Pedersen, in the 1950's, utilizing early hospitalization, reduced the infant mortality to 25%. With further improvement in antenatal and neonatal care, the overall mortality rate decreased to 10%, and with modern perinatal care, the perinatal mortality rate should be less than 1%.

I. CLASSIFICATION OF DIABETIC PREGNANCIES

Although there have been many attempts to classify diabetic pregnancies in relation to severity of disease, the method proposed by White has proven to be most useful:⁵

- A. Chemical diabetes
- B. Onset after age 20 and duration less than 10 years
- C. Onset between age 10-19 or duration 10-19 years
- D. Onset before age 10 or duration greater than 20 years
- F. Nephropathy

H. Heart disease

R. Retinopathy

This classification was recently further subdivided.⁵ Several authors have demonstrated a progressive increase in fetal loss with progression down the classification scheme.⁶ This implies a correlation between fetal outcome and severity of diabetes in terms of duration of disease, age of onset, and vascular damage.

A second useful classification of pregnancy complicated by diabetes is the utilization by Pedersen of Prognostically Bad Signs In Pregnancy (PBSP):⁷

Clinical pyelonephritis

Precoma

Severe acidosis

Mild or severe toxemia

When White's classification and Pedersen's PBSP are simultaneously evaluated, it has been shown that the Perinatal Mortality Rate is significantly affected by the PBSP, being 25.9%, when PBSP signs are present and 7.5% when they are absent.

II. DIAGNOSIS OF GESTATIONAL DIABETES

The diagnosis and classification of diabetes in pregnancy is obvious when the patient is a known insulin dependent diabetic. However, diagnosis of gestational (Class A) diabetes remains controversial. Questions which need to be resolved are how to screen for gestational diabetes, who should be screened, and what is the best screening method. In the past, a history of the birth of a baby weighing nine pounds or more, a history in two or more pregnancies of a fetal death, neonatal death, congenital anomaly, prematurity, excessive weight gain, hypertension, family history of diabetes, or a history of an elevated blood sugar or glycosuria has been the only indication for Glucose Tolerance

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Testing (GTT) during pregnancy.

O'Sullivan, screening all pregnant patients, attempted to evaluate the various aspects of history versus a 50 gm. oral GTT.⁸ Sensitivity, the number of gestational diabetic patients in a population correctly identified, and specificity, the number of people correctly excluded without this condition, were determined. They demonstrated that by using a 50 gm. oral glucose tolerance test (OGTT), the sensitivity and specificity rates would be 79% and 87% respectively. This increased to 88% and 82% respectively when the target population was confined to patients 25 years of age and older. Whereas, the values decreased to 53% and increased to 93% respectively when one or more clinical history factors were employed. Shea and associates⁹ have shown that glycosuria, the most common indicator for GTT, is likely to be detected in only 32% of diabetic pregnancies. These data suggest that all pregnant patients should be screened for diabetes with the OGTT.

The most often employed method of establishing the diagnosis of gestational diabetes is the 3 hour 100 gm. oral glucose tolerance test. Values should be considered normal or abnormal according to the criteria of O'Sullivan:⁸

Two or more values exceeding the following whole blood glucose values establishes the diagnosis of gestational diabetes:

Fasting	90 mg
One hour	165
Two hour	145
Three hour	125

If the patient is highly suspect of having diabetes, or continues to display glycosuria, the pursuit of the diagnosis should not be abandoned before 36 weeks gestation.¹⁰ This will require repeating the GTT each trimester.

III. THE FETUS AND INFANT OF DIABETIC MOTHER

From the moment of conception, the fetus of a diabetic mother is in jeopardy. North et. al., for the years 1958-1969, reported that fetal deaths, defined as still births occurring after 20 weeks gestation, were increased ten times that of non-diabetic pregnancies.¹¹ In this series, the death rate increased with gestational age, and was excessive after 32 weeks gestation. No distinction was made in their study between pre-existing or gestational diabetes. Their infant mortality rate of 126 per 1000 live births is similar to that reported by Gellis and Hsia, but higher than that reported in the collaborative study.¹²

Neonatal deaths, defined by deaths of live-born infants prior to 28 days of life, were found by North et. al. to be five times that of infants of non-diabetic mothers.

When considering the overall perinatal mortality rate, North, reporting for the period 1958-59, demonstrated a rate of 190/1000 live births. Gellis and Harris report a similar ratio. Pedersen subdivided the years, 1946-1972, into three groups (1946-1955, 1956-1965, and 1966-1972). He illustrated a decrease in perinatal mortality of 221 to 185 to 103 respectively for the three periods. The more recent rates being considerably lower presumably represents better combined efforts of obstetric and neonatal care.

The question of an increase in congenital malformations, a once vigorously contested issue, has, in recent years, become quite convincing. Some have tried to describe a specific syndrome, caudal regression syndrome, to infants of diabetic mothers.¹³ Others, in well controlled studies, have failed to find this association. Chung and Myrianthopoulos have made important observations.¹⁴ First, the teratogenesis must take place at an early stage of embryonic development, because the malformations appear to be distributed throughout all organ systems. Second, insulin therapy neither increased nor decreased the malformation risk, although, the control group for insulin dependent diabetics was small. Third, paternal diabetes did not contribute to the risk of malformation, suggesting that it is the metabolic interactions of the mother which are solely responsible for increased risk of malformation. And finally, the risk of malformation increases with the severity of the disease.¹⁵

Fetal macrosomia is another problem leading to obstetric complications. The association between diabetes mellitus and large birthweight infants was first reported by Allen in 1939.¹⁶ Multiple factors have been implicated in the etiology of these large birth weight infants. The mechanism most likely responsible for excessive birthweight for gestational age is hyperglycemia in the mother and hyperinsulinism in the fetus. The anabolic effect of insulin is manifest as increased fetal weight.¹⁷ Metabolic observations made in infants of diabetic mothers would seem to reinforce this hypothesis.¹⁸

Horger points out that macrosomia increases the incidence of maternal complications such as toxemia, puerperal infection, feto-pelvic disproportion, and prolonged labor, as well as the greater likelihood of cesarean section, and use of midforceps.¹⁹

Ziel reported an eight percent perinatal morbidity secondary to birth trauma following vaginal de-

livery of infants of diabetic mothers.²⁰ There is macrosomia in the absence of maternal vascular disease (Class A, B, C), and IUGR with vascular disease (Classes D, F, H, and R). Clinical observations indicate that macrosomia can be decreased or prevented by insulin therapy that regulates blood glucose at normal levels throughout pregnancy.²¹

Hypoglycemia and hypocalcemia are well known problems in infants of diabetic mothers. Newborn infants have their blood sugar approximately two thirds the level of the maternal blood glucose at birth; hence, immediate hypoglycemia is not usually encountered.²² Baird and Farquhar first demonstrated a greater responsiveness to glucose in infants of diabetic mothers in contrast to infants of non-diabetic mothers.²³ They also demonstrated that infants of gestational diabetic mothers have a greater late insulin rise one hour after glucose injection, matching their somewhat faster glucose clearance. Umbilical cord insulin of women with a diabetic OGTT have been found to be significantly higher than women with a non-diabetic OGTT.²⁴ Persson¹⁸ has found the mean glucose disposal rate of infants of diabetic mothers significantly higher than the corresponding values of infants of gestational diabetic mothers and controls, but also significantly lower than previous studies with comparable protocols.²⁵ He attributes these contradictory results to difference in diabetic control during pregnancy. Gillmer et. al. have shown that both the total area under the OGTT curve and the OGTT two hour glucose level of the mother were strongly correlated both to glucose disposal rate during the first two hours and the infant's plasma glucose level at two hours.²⁶ Hypocalcemia often occurs during the first 48 hours of life in the infants of diabetic mothers. Tsang,²⁷ in a well controlled study, showed that plasma calcium was significantly reduced in infants of diabetic mothers and the phosphorous raised. He attributed these findings to transient aberration of parathyroid function.

Hyperbilirubinemia is also common in infants of diabetic mothers. Essex et. al.²⁸ have shown that hyperbilirubinemia can occur in as many as one third of infants of diabetic mothers (unconjugated serum bilirubin greater than 10 mg/100 ml), and that approximately 10% of these reach exchange transfusion levels (20 mg%).

The most sinister of threats to the infants of diabetic mothers is that of Respiratory Distress (RDS). It is generally acknowledged that the infant of a diabetic mother is at risk for developing respiratory distress.²⁹ What is difficult to decipher is what amount is due to diabetes itself, and not the superimposed circumstances surrounding the pregnancy

and delivery. Robert et al.,³⁰ in a large study, addressed this particular issue. They found that RDS occurred in 23.4% of the diabetic, versus 1.3% of the non-diabetic group. When all factors known to influence the incidence of RDS, such as gestational age, route of delivery, etc. were controlled by using a multivariate confounder summarizing score, the results revealed that the infant of a diabetic mother still had a risk of developing RDS 5.6 times that of the infants of non-diabetic mothers.

IV. MATERNAL MORBIDITY AND MORTALITY

Maternal mortality has dramatically decreased since 1921; however, neither mortality nor morbidity has been completely eradicated. Gabbe et. al.,³¹ reviewing mortality statistics in Los Angeles County for the period 1957-1974, found maternal deaths associated with diabetes in 3% of the 793 collected cases. They concluded that ketoacidosis and hypoglycemia are important, and often avoidable causes of maternal death. The diabetic mother is in greatest jeopardy for developing ketoacidosis in the second and third trimesters, as it is at this period in gestation when the "contrainsulin" factors begin to exert their effect. White³² states that ketoacidosis in diabetic pregnancy has a rapid onset, and occurs at a relatively low blood glucose level (less than 200 mg%), and there is greater refractoriness to exogenous insulin therapy. The patients most susceptible to ketoacidosis are the "short-term" diabetics, as opposed to the "growth-onset" diabetics, presumably because they are unfamiliar with the signs and symptoms of ketoacidosis.

In contrast, hypoglycemic episodes occur more frequently in the first trimester, and post-partum period. The etiology of hypoglycemia in the first trimester is unknown. Post-partum hypoglycemia is thought due to rapidly declining levels of placental hormones.

Other factors known to be operative in maternal mortality statistics for the diabetic are an increased incidence of toxemia, fatal myocardial infarction in patients over 30 years of age,³³ and possibly pulmonary embolism.³⁴

V. REGULATION OF MATERNAL CARBOHYDRATE METABOLISM

Regulation of carbohydrate metabolism during pregnancy is exceedingly complex. There is a tendency toward hypoglycemia during the first trimester, and hyperglycemia in the last two trimesters. Tyson³⁵ and Kieval³⁶ identify two factors which are operative in pregnancy, and may alter carbohydrate metabolism. The first is that the fetus is largely dependent on glucose for its energy requirements. Second, the placenta produces increasing quantities

of hormones which diminish the effectiveness of maternal insulin. Since the capacity for glucose synthesis from non-carbohydrate precursors is developed in the fetal liver, the energy requirements of the fetus must be supplied by utilization of available glucose stores from the maternal circulation. *Invitro* studies of perfused placentas have shown that there is no transfer of insulin from the maternal to the fetal side.³⁷ *In vivo* studies performed by Kalhan et. al.³⁸ have demonstrated that fetal insulin is detectable by the 12th week of pregnancy, and is active in fetal metabolism. This is one explanation for hypoglycemia during the first trimester. The hypoglycemia cannot be explained as being secondary to weight gain in the fetus or placenta, as the weight gain for these structures is negligible.³⁹ An alternative explanation would be altered maternal glucose secretion and storage of glucose as fat.

The placenta influences carbohydrate metabolism by producing hormone's "contra-insulin factors" which tend to increase demands on the pancreas for increased insulin production. The diabetogenic effect of pregnancy is also associated with an alteration in the peripheral utilization of blood glucose⁴⁰ and hyperlipidemia, both of which are secondary to increasing insulin resistance. One of the factors increasing such resistance is human placental lactogen which is produced by the syncytiotrophoblast, and is chemically and immunologically similar to Human Growth Hormones (HGH). Human placental lactogen presumably acts by increasing the insulin resistance of peripheral tissues.⁴¹ Spellacy⁴² pointed out that there have been numerous reports linking elevations of insulin, glucose, and free fatty acids to injections of human placental lactogen. Grumbach et. al.⁴³ postulates human placental lactogen to be the "growth hormone of the second half of pregnancy", its action being to enhance fat mobilization and simultaneously reducing maternal glucose utilization and protein breakdown, consequently presenting increased quantities of glucose and amino acids for fetal utilization. Spellacy, however, has demonstrated that there is no consistent variation between the total daily insulin requirement of juvenile diabetics in pregnancy and their serum HPL levels. He concludes that the insulin requirements of pregnancy are not solely dependent upon human placental lactogen, but rather upon other factors as well, acting synergistically with human placental lactogen.

Progesterone is another hormone postulated to enhance the diabetogenic effect of pregnancy. Kalkhoff⁴⁴ has presented data that progesterone injection, like gestation, actually promotes enhanced plasma insulin responses to both glucose and tolbutamide,

while, at the same time, diminishing its peripheral effectiveness.

Estrogen is also believed to enhance the diabetogenic effect of pregnancy. For example, estrogen administered in oral contraceptives, has been shown to induce a higher incidence of impaired carbohydrate tolerance in subclinical diabetic subjects.⁴⁵ It has also been postulated that estrogen acts as an insulin antagonist as opposed to an inhibitor of insulin secretion.⁴⁶ Other studies contend that estrogens may actually protect against the development of diabetes mellitus.⁴⁷ Further studies are needed to elucidate the true mechanisms of action of estrogen and its inter-relationships with carbohydrate metabolism.

Doe et. al.⁴⁸ have pointed out that plasma free cortisol is elevated in pregnant women, and in normal subjects during estrogen treatment. Kopelman⁴⁹ suggests that maternal plasma concentration of free and metabolically active cortisol is elevated, producing increased levels of blood glucose. Spellacy⁵⁰ notes interference with the mechanisms of action of HGH in pregnancy. Stimulation with insulin-induced hypoglycemia revealed a suppression of HGH release beginning in midpregnancy, and persisting for more than one week post-partum. He also points out that one mechanism may be the elevated cortisol seen in late pregnancy as proposed by Doe; however, other causes for the suppression are also possible.

In addition, Posner⁵¹ has identified two enzymatic activities in human placenta for proteolytic inactivity of maternal insulin. The pancreatic response to the "contra-insulin factors" is one of augmented insulin secretion. The "contra-insulin factors" becomes most prevalent at 24 to 28 weeks gestation; hence, this is where pancreatic demands are at their zenith. If pancreatic reserve becomes diminished, as in a gestational diabetic, or exhausted, as in a growth onset diabetic, the only recourse is to limit carbohydrate intake and/or supply exogenous insulin.

The most attractive hypothesis for the etiology of gestational diabetes is the inability of the pancreatic beta cell to maintain suitable insulin secretion to support gestational glucose homeostasis.

VI. INSULIN THERAPY DURING PREGNANCY

In order to approach the problem of insulin therapy, a knowledge of daily variation in blood glucose is helpful. Gilmer⁵² demonstrated that in normal women, there is a constancy in plasma glucose throughout pregnancy, tending to remain below 100 mg/100 ml, except after meals. Preprandial plasma glucose levels were, generally, lower in late pregnancy, and postprandial plasma glucose values were higher. The diurnal glucose range was greater

in later pregnancy; however, the mean diurnal plasma glucose did not change. Plasma insulin was increased throughout the day, and the mean insulin-glucose ratio was doubled in late pregnancy. The mean diurnal plasma glucose of the gestational diabetic groups was much higher than normal patients. There was a similar day and night pattern between the two groups, but glucose levels fluctuated more in the gestational diabetic group. In the insulin dependent diabetic group, the mean glucose values were higher than normal with increased variability. Diurnal fluctuations were also much greater than either the normal or gestational diabetic groups, because of a tendency for hyperglycemia after meals and hypoglycemia during the night. These fluctuations were seen in well controlled diabetics as monitored by routine preprandial blood glucose samples. In all, the increased diurnal variability was $3 \times$ that seen in normal women of a comparable gestational age.

Karlsson and Kjellmer, in 1971, reported a significantly decreased perinatal mortality rate if the mean blood sugar was maintained less than, or equal to 100 mg%. This is in agreement with others.⁵³

To attain this goal, all patients should be hospitalized when initially seen, and a glucose profile developed, consisting of blood sampling every two hours over a fourteen hour period. The profile will evaluate not only the degree of abnormality in carbohydrate homeostasis, but also the timing of abnormal glucose values. The patient's diet, insulin therapy, and activity can then be constructed to fit individual requirements. This hospitalization also provides an opportune time for evaluation of cardiovascular, ophthalmologic, and renal functions, which can serve for base line data. Dietary intake should be individually planned in cooperative efforts with a dietitian. The average calorie allotment should be 1800 to 2000 calories per day, or 30-35 calories/kg, consisting of 1.5-2 gm/kg protein, 200 gm carbohydrate, and the remainder fat. This must be individually tapered to the obesity of the patient. This should be divided into 4 separate meals. The use of diet alone, or diet plus insulin therapy for management of gestational diabetic patients still remains controversial. O'Sullivan,⁵⁴ in a large prospective study, demonstrated a significant reduction in the perinatal mortality rate of proven gestational diabetics treated with diet and insulin, as compared to a control group treated with diet alone. He also demonstrated a decrease in size of babies born to diabetic mothers treated with insulin. In a subsequent report,⁵⁵ the findings of decreased perinatal mortality rate were limited to patients greater than 25 years of age.⁵⁶ He also em-

phasized that early institution of insulin therapy improved fetal salvage. Persson et. al. evaluated metabolic control in gestational diabetics, treated with diet alone, and studied Free Fatty Acids (FFA), Glycerol, D-betahydroxybuterate, Insulin, and Glucose. They concluded that although these women had only moderately decreased glucose tolerance, treatment with diet alone was not sufficient to normalize their metabolic profiles. They further speculated that a greater improvement in metabolic control in gestational diabetic patients with a moderately decreased glucose tolerance might be achieved by the addition of insulin. In summary, the issue of whether or not to use insulin in gestational diabetic patients is not completely resolved; however, these data suggest that the gestational diabetic patient should be treated with insulin.

In insulin dependent diabetics, NPH insulin, combined with a more short acting crystalline zinc insulin is the regimen of choice. Lewis et. al.⁵⁷ have pointed out that daily requirements should be given in two injections. The ratio of NPH to regular was 2:1 in the morning and 1:1 in the evening, with the morning dosage roughly twice the evening dosage. Changes in dosages as pregnancy progresses must be individualized. The patient should be observed closely, at all times, for signs of infection. If any problems in outpatient management arise, the patient should be hospitalized until control is re-established.

VII. FETAL ASSESSMENT

Determination of gestational age is of utmost necessity in diabetic patients, because it is around an accurate EDC that you will formulate the time of delivery. Diabetic patients can have small-for-dates babies, macrosomia, or substantial amounts of hydramnios, all of which lead to confusion in assessment. Clinical data from an early prenatal visit, and reliable dates of the last menstrual period for quickening cannot be over emphasized. All too often, however, these parameters are missing or questionable.

Ultrasound is reliable for estimation of gestational age in diabetic pregnancies. Murata⁵⁸ has shown that there are no significant differences between normal and diabetic patients in weeks 30 to 37. In normal patients at 37-40 weeks gestation, a slowing in the rate of growth of the BPD occurs. In contrast, the diabetic group continues to increase the BPD at the same rate as in the preceding two months. Serial ultrasound measurement can also be important for monitoring fetal growth. Failure of growth increase can signal intrauterine growth retardation. Biparietal measurements on two or three occasions between 20 and 30 weeks allow ac-

curate prediction of the EDC within 7 to 10 days.⁵⁹

The inability to adequately assess the intrauterine status of the fetus of a diabetic patient has led investigators into a maze of research of almost every hormone associated with pregnancy. The most frequently studied hormone is the family of estrogens. Samman et. al.⁶⁰ in studying serum Estrone (E_1), Estradiol (E_2), Estriol (E_3), and 24 hour urine Estriol, concluded that unconjugated serum E_1 and E_2 may be of value in predicting fetal outcome, that plasma E_3 values are low in all diabetic patients, regardless of fetal outcome, and the urinary E_3 correlated well with fetal survival.

The advantages of a serum specimen over a 24 hour urine specimen are quite obvious. Many investigators have attempted to utilize serum Estriol in assessing fetal status in a high-risk pregnancy, but have encountered problems such as the specific E_3 that is measured, the time of day the measurement is taken,⁶¹ renal function of the patient, and⁶² drug interference. Nachtingall⁶³ measured serial total plasma estriol in diabetic pregnancies, and found the values for Class (A, B, and C) diabetics in good control were not statistically different from normal patients. It is now possible to measure unconjugated E_3 fractions in serum. Freeman et. al. have produced data which show that there are diurnal patterns ranging from 10 to 15%, but these are overshadowed by day to day changes. They suggest that drops in unconjugated E_3 or total plasma E_3 must exceed 40 to 45% of the mean of the three preceding determinations to be considered a sign of fetal distress.

Urinary estriol estimations have been reported in many ways; however, the 24 hour value and total urinary creatinine remains the most established method. Gobelsman and Freeman et. al.⁶⁴ point out that in order to be useful, daily samples must be obtained. They also recommend decreases be considered significant when there is a drop of 40% or more in E_3 excretion accompanied by a concomitant decrease in the E_3 /creatinine ratio which amounted to one half of the fall in E_3 excretion, or to a 20% drop in the E_3 creatinine ratio.

Another placental hormone which has been investigated for assessing fetal outcome is HPL. Spelacy⁶⁵ reported HPL levels to be in the fetal danger zone ($< 4\mu\text{g/ml}$) in a small number of patients with diabetes mellitus and hypertension. Cohen et. al.⁶⁶ concluded that complication-free diabetic pregnancies having HPL values within the normal range will always result in the birth of a live baby; however, pregnancy complicated by diabetic instability has values which are higher than normal, and therefore, make assessment of fetal status unreliable. The val-

ue of HPL usage in pregnancy complicated by diabetes is yet to be determined.

The oxytocin challenge test as described by Freeman⁶⁷ can be utilized in diabetic pregnancy for assessing fetal status. Their experience in diabetic patients indicates that one may expect the OCT to become positive prior to a fall in estriol by several days to several weeks. Others agree with the value of the OCT.⁶⁸ Recent reports have shown that the negative OCT does not monitor acute events such as cord accidents, or rapid deterioration in status due to ketoacidosis.

One final area to consider in management are the amniotic fluid tests. The most useful of these tests is the determination of the Lecithin an Sphingomyelin ratio (L/S). Gluck and Kulovick⁶⁹ demonstrated that Classes A, B, and C diabetics resulted in a delay in maturation of the L/S; whereas, Classes D, E, and F actually revealed an acceleration. Skjaeraasen and Lindback⁷⁰ have confirmed the acceleration of surfactant production in White's Classes D and F, but failed to find any difference between Classes A, B, and C, and a reference population. Of utmost concern has been the realization that the L/S can be falsely positive (i.e. greater than 2.0 and still develop RDS) in a diabetic patient. Cruz et. al.⁷¹ have recently reported on a small number of insulin dependent diabetics who were found to have an increased incidence of falsely positive L/S ratios. They further pointed out that reports are conflicting on this issue, but that others have also documented this experience.

Amniotic fluid creatinines are another useful parameter in judging fetal gestational age. Cassady et. al.,⁷² in a large study of 167 diabetic patients, concluded that amniotic fluid creatinine in pregnancies complicated by diabetes were similar to those of uncomplicated pregnancy of a comparable gestation. However, when maternal vascular disease occurred in diabetic patients, elevated amniotic fluid creatinine occurred to such a degree that overestimation of gestational age was a hazard. Lostrand et. al.⁷³ have also confirmed this elevation in the 36-37th week. Cassady also observed that failure of the amniotic fluid creatinine to rise on successive serial samples accompanied an increased risk of perinatal death.

VIII. TIMING AND METHOD OF DELIVERY

The timing of delivery in a diabetic pregnancy is complex. The optimal time is when the fetus is mature enough to survive outside the uterus without undue morbidity. Generally, it has been the policy to confine the diabetic mother several weeks before scheduled termination of pregnancy, and to monitor the status of the fetus until this time. Shea has

demonstrated that a gestational diabetic can be carried to 40 weeks without an increased perinatal mortality rate. For other classes of diabetes, recommendations have varied considerably, and are best individually managed.

On the day of delivery itself, we begin an IV of D₅W at 70-100 cc/hour. A heparin loc can be inserted into a vein in the contralateral arm to measure blood glucose. The insulin dosage on that day is changed to regular decreased by 50%, and administered Sub-Q. The patient will be awake in order that hypoglycemic symptoms are recognized. Fetal monitoring is observed with the appropriate equipment. Should variable or late decelerations occur, a fetal scalp pH is performed. When the pH is less than 7.25, immediate delivery should be considered. If techniques for fetal scalp pH are not available, and variable or late decelerations occur, cesarean section should be performed. Post-partum serum glucose is measured Q - 30 minutes \times 1 hour, then Q - 1 hour \times 12 hours; than Q-4 hours. Insulin can then be administered appropriately.

For the follow-up of patients who have demonstrated abnormal glucose tolerance during pregnancy or those having a history of complications such as family history of diabetes, antenatal fetal death, perinatal death, multiple abortions, toxemia, or birth of a baby greater than, or equal to, nine pounds in the post-partum period, several tests can be utilized for diagnosis of diabetes. The oral GTT (OGTT) or Prednisone Glucose Tolerance Test (PGTT) have proven to be most useful. Different criteria have been proposed for interpreting the OGTT in the post-partum period;⁷⁴ whereas, the criteria of Carmerini-Davalos et. al.⁷⁵ can be used for the PGTT. Salzberger reports that tests performed on the third post-partum day will yield a frequency of 1.68% in overt and latent diabetics, which is similar to that found in non-pregnant women of the same age group. If immediate post-partum testing is inconclusive, this should not deter the physician. Subsequent testing with FBS, OGTT, and possibly PGTT should be performed at three months, and then annually. O'Sullivan⁷⁶ observed an incidence of 7.1% post-partum, and 28.5% over a 5½ year period. Mestman et. al.⁷⁷ have demonstrated the value of follow-up using the above described tests for demonstrating deterioration of carbohydrate homeostasis and progression towards the diabetic state in patients with abnormal values during the antepartum and post-partum period.

IX. SUMMARY

Insulin therapy and medical evaluation of the pregnant diabetic, critical fetal assessment during

pregnancy, optimal timing and route of delivery, and neonatal complications of the infant of the diabetic mother are exceedingly complex medical problems that require utilization of all available diagnostic tools and resources, as well as critical clinical judgment.

The objectives of modern obstetrical care are a live, healthy mother and infant. Every attempt should be made to decrease morbidity for mother and infant. Mortality of either should be considered unacceptable.

Once the diagnosis of pregnancy is established in the diabetic patient, she should be hospitalized, classified, and evaluation of the ophthalmological, renal, and cardiovascular systems be carried out to give baseline data. Insulin therapy should be aimed at keeping the blood glucose within normal limits. Urine cultures should be done on the initial hospitalization, and if negative, repeated at 25 and 35 weeks of gestation.

Fetal assessment starts with ultrasound evaluation of the fetus between 14 and 20 weeks gestation to document gestational age, and to rule out major congenital malformations such as anencephaly and other neural tube defects. The ultrasound is repeated between 28 and 32 weeks gestation to evaluate fetal growth and to further determine with better accuracy the EDC. A final ultrasound is performed prior to delivery in order to determine the optimal site for amniocentesis.

Estriol determinations are begun weekly at 28 weeks gestation in order to give baseline values. If normal, the estriol values are repeated three times weekly from 32 to 37 weeks, and daily thereafter.

Non-stress fetal heart rate evaluation is begun at 30 weeks gestation and repeated weekly thereafter. If the beat-to-beat variability is greater than 6/minute, and there is good acceleration of fetal heart rate with fetal movement, the oxytocin challenge test may not be indicated; however, a 35-50% drop in daily estriols from the mean of three previous days, or the absence of beat-to-beat variability on fetal heart rate evaluation requires hospitalization, oxytocin stress testing, and amniocentesis for assessment of fetal maturity.

Amniocentesis should be performed on all diabetic patients (including gestational) to determine fetal lung maturity prior to delivery. In general, if the fetal condition is excellent, and the maternal diabetes in good control, delivery should not be carried out until the L/S is greater than 2.5.

The most important point to remember is that each pregnant diabetic patient is now managed individually. There are no set policies for timing of delivery or route of delivery for the different classi-

fications of pregnant diabetics. Rather, timing of delivery is determined in each patient based on gestational age, fetal lung maturity (L/S), estriol levels, fetal heart rate evaluation (OCT, non-stress testing), diabetes control, and sound clinical judgment. The newborn infant is then closely monitored for hypoglycemia, hypocalcemia, hyperbilirubine-mia, and RDS.

With insulin therapy, maintaining blood glucose levels within normal limits, utilization of fetal as-sessment techniques, optimal intensive care of the newborn, and good patient cooperation, the perina-tal mortality will approach zero.

The bibliography for **Diabetes in Pregnancy: A Review** may be obtained from the Office of SDJM, 608 West Ave., N., Sioux Falls, SD.

LABORATORY AIDS

Sponsored by the South Dakota Society of Pathologists

THEOPHYLLINE LEVELS

Theophylline is one of a group of methylated xanthine compounds which include caffeine and theobromine. Aminophylline, an ethylene diamine salt containing 80% by weight theophylline, is a commonly used intravenous drug of this class of compounds.

The drug causes relaxation of the smooth muscle of bronchi and blood vessels other than in the central nervous system, inhibits histamine release from mast cells, stimulates respiration, augments cardiac muscle action and is a general central nervous system stimulant. The major use is for bronchial smooth muscle relaxation in asthma and inhibition of histamine release from mast cells. It has been used in left ventricular failure and apnea and bradycardia of the newborn. The mechanism of this action is through an antagonistic effect on phosphodiesterase causing build up of the chemical mediator cyclic AMP which directly affects the smooth muscle and mast cells. It is interesting that theophylline acts synergistically in this regard with catecholamines and ephedrine which increase cyclic AMP through stimulation of adenylcyclase as indicated below:



Theophylline is conjugated in the liver and the metabolites are excreted into the urine. Only 10% of native drug is excreted by the renal route. Liver disease can be responsible for drug retention and high plasma levels. Because of a highly variable plasma half life as well as a highly variable oral and



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rectal absorption, measurement of drug levels is necessary in monitoring therapy. After an oral dose, plasma levels reach a maximum at about 2 hours and decrease by 20% after 4 hours. Average plasma half life is 4-5 hours but this is variable. After an oral dose, serum levels should be determined two hours after ingestion.

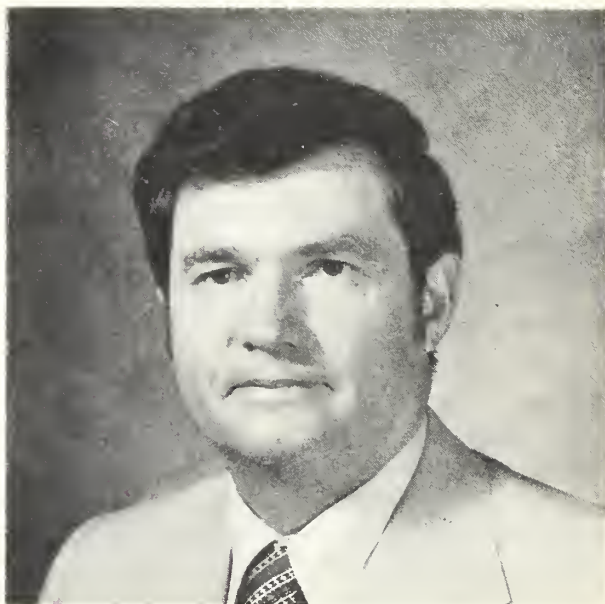
One recommendation has been to maintain plasma levels between 10 and 20 mg/L in adults and 5 and 15 mg/L in newborns. Above these levels toxic symptoms may occur including nausea, vomiting, and abdominal discomfort. The most serious toxicity, however, involves the central nervous and cardio-vascular systems. Palpitations, hypotension, cardiac arrhythmias and cardiac arrest may occur after rapid intravenous injection of drug. Headache, dizziness and convulsions also may occur, the latter without premonitory symptoms. Dosage of the drug by weight formulas such as promulgated by Mitenko and Oligivie have given rise to toxic levels of drug according to several authors (Kordash et al, Weinberger et al, Zwillich et al). Measurement of serum levels would seem mandatory in this light.

In summary, theophylline is a useful but potentially toxic drug which requires monitoring of serum levels:

1. Because of irregular and variable oral or rectal absorption.
2. Potential life threatening toxicity when used intravenously.
3. Unpredictable plasma levels in liver dysfunction.
4. Drug given by weight formulas results in variable plasma levels.

John F. Barlow, M.D.
Pathologist

President's Page



The first week in February is a good time to recharge your batteries by combining a little vacation with continuing medical education. The evening of February 1, the Black Hills Winter Ski Seminar being held at the Holiday Inn, Spearfish, starts off with an excellent speaker, Roy Pfautch, who will talk on "How to be Effective Politically." The 2nd, 3rd and 4th of February has continuing medical education acceptable for 14 **Prescribed** hours by the American Academy of Family Physicians. Thursday and Friday the lecture hours are from 7:30 a.m. to 9:40 a.m. and 5:30 p.m. to 8:00 p.m. This leaves the day time hours open for winter recreation in the Black Hills. Saturday the lectures are from 7:30 a.m. to noon.

The South Dakota Academy of Family Physicians is working on a core content for continuing medical education. This means they are considering all continuing medical education meetings in the state and are trying to plan complete coverage for all major fields over a six year period. Hopefully the end result will produce enough educational hours in several fields to meet the requirements (by both the State Medical Association and the Academy of Family Physicians) of 150 hours of continuing medical education every three years. The overall plan is to make 150 hours available every three years in South Dakota.

Special thanks should go to the South Dakota Chapter of the American Academy of Family Physicians, the South Dakota Chapter of the American Academy of Pediatrics and the South Dakota Society of Obstetrics and Gynecology for their organizational work to make these meetings successful, and to the Medical School and its teaching staff for contributing to the success of our state meetings, the Black Hills seminars and the one day ongoing teaching seminars held throughout the state. Your attendance at these meetings adds to their success. Also, the relaxation time is usually more fulfilling when you are among friends and associates. See you in Spearfish.



Have a happy day!

Fraternally,
James Ryan, M.D., President
South Dakota State Medical Association

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This Is Your Medical Association

Bruce Lushbough, M. D., Brookings, has been named to the executive committee of the University of South Dakota School of Medicine as a representative of the SDSMA. This committee advises the medical school's dean in present and future policies.

* * * *

Bill Church, M. D., Sioux Falls, was named secretary of the American Association of Physicians and Surgeons during their annual meeting in Memphis, Tennessee.

* * * *

New officers for the Madison-Brookings District Medical Society are as follows: **A. A. Lampert, Jr., M. D.**, President; **K. J. Kroack, M. D.**, Secretary; and **Ronold Tesch, M. D.**, Vice President.

* * * *

Fred Pope, M. D., Yankton, lectured on "Borderline Diagnosis" at the V. A. Hospital, Fort Meade.

* * * *

Participants in the Tri Regional Emergency Medical Services Workshop held in Phoenix, Arizona, heard **A. J. Janusz, M. D.**, Aberdeen, present a paper on "Emergency Medical Services in South Dakota."

Edward Francisco, M. D., formerly of Estelline, has joined the medical corps, United States Navy, and is stationed at the Marine Corp Air Station, El Toro, California. **Jesulin B. Alindogan, M. D.**, a general surgeon, has located his practice in Estelline. Dr. Alindogan is a graduate of the University of Santo Tomas School of Medicine, Philippines, he interned at Mercy Hospital, Hamilton, Ohio, and took his residency training in Ohio and New York. Prior to moving to Estelline he worked as an emergency room physician at St. Clares Hospital, Schenectady, New York.

* * * *

B. C. Gerber, M. D., Aberdeen, has been named to represent South Dakota on the board of governors of the American College of Surgeons.

* * * *

Physicians providing physical exams for children in the Head Start Program sponsored by the South Dakota Air National Guard included **Jim Nielson, M. D.**, **Jim Oakland, M. D.**, **Jim Miller, M. D.**, **Dave Yecha, M. D.**, **Kevin Wycott, M. D.**, **Charles Sullivan, M. D.**, **Dennis Foster, M. D.** and **Ed Clark, M. D.**, all associated with the Family Practice Residency Program in Sioux Falls.

* * * *

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W. H. Saxton, M. D., long time Huron physician died recently at age 80. Dr. Saxton, a Huron native, graduated from Western Reserve University School of Medicine in 1919 and interned at Cleveland City Hospital before returning to South Dakota. He was an honorary member of the Huron District Medical Society and the State Medical Association and served as president of SDSMA in 1950. He was recipient of the SDSMA Community Service Award in 1970.

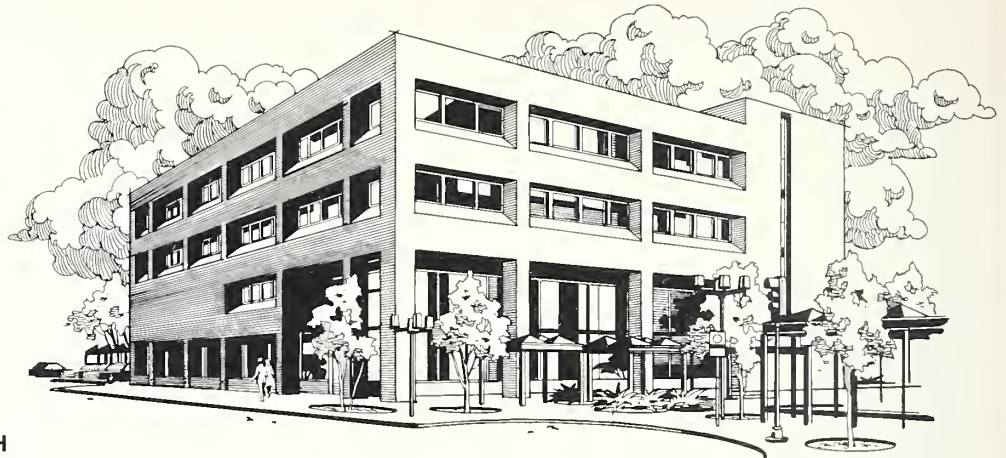
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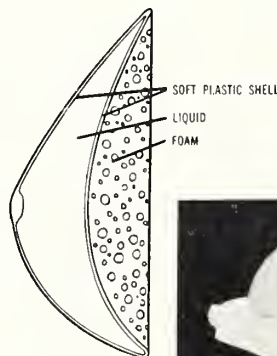
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SDAFP HISTORY

The formation of a South Dakota Academy of Family Physicians was first discussed at a meeting held at McKennan Hospital Library in Sioux Falls on June 4, 1950, called by A. P. Reding of Marion, South Dakota. Physicians present were: A. P. Reding; M. Dobrinsky of Estelline; E. L. Parke of Canton; and L. J. Pankow, H. O. Kittelson, and J. A. Kittelson of Sioux Falls.

The charter date was later set as January 1, 1951, and the first organizational meeting was held at the Marvin Hughitt Hotel in Huron on January 13, 1951.

Year	President	Delegates	Secretary-Treasurer
1951-52	F. F. Pfister, Webster	L. J. Pankow, S.F., J. A. Kittelson, S.F.	J. A. Kittelson, S.F.
1952-53	A. P. Reding, Marion	A. P. Peeke, Volga, J. C. Hagin, Miller	Kittelson
1953-54	R. A. Buchanan, Huron	M. Dobrinsky, Estelline, Hagin	Kittelson
1954-55	J. C. Hagin, Miller	A. P. Reding, Marion, Hagin	Magni Davidson, Bkgs.
1955-56	H. J. Grau, Rapid City	Hagin, Reding	Davidson
1956-57	H. R. Wold, Madison	Hagin, Reding	Davidson
1957-58	C. A. Johnson, Lemmon	Hagin, Reding	Davidson
1958-59	C. J. McDonald, S.F.	Reding, Hagin	H. R. Wold, Madison
1959-60	G. J. Bloemendaal, Ipswich	Reding, Hagin	Wold
1960-61	Magni Davidson, Brookings	Reding, Hagin	Wold
1961-62	Preston Brogdon, Mitchell	Reding, Hagin	Wold
1962-63	Brogdon	Reding, Hagin	Wold
1963-64	C. F. Binder, Chamberlain	Reding, Hagin	Wold
1964-65	Binder	Reding, Hagin	Wold
1965-66	H. R. Wold	Reding, Hagin	W. O. Hanson, Huron
1966-67	G. R. Bell, De Smet	Reding, Hagin	Hanson
1967-68	P. K. Aspaas, Dell Rapids	Reding, E. T. Lietzke, Beresford	Hanson
1968-69	J. S. Devick, Colton	Reding, Lietzke	P. K. Aspaas, D.R.
1969-70	D. L. Scheller, Arlington	Reding, Lietzke	Aspaas
1970-71	Scheller	Reding, Lietzke	Aspaas
1971-72	L. J. Sweeney, Sioux Falls	Reding, P. K. Aspaas, D.R.	L. H. Amundson, S.F.
1972-73	Sweeney	Reding, L. H. Amundson, S.F.	Amundson
1973-74	B. C. Lushbough, Bkgs.	L. J. Sweeney, S.F., Amundson	Amundson
1974-75	W. J. Kovarik, Rapid City	Kovarik, Amundson	Amundson
1975-76	R. W. Friess, Sioux Falls	Friess, Amundson	Amundson
1976-77	Friess	Friess, Amundson	Amundson
1977-78	B. O. Lindbloom, Pierre	Friess, Amundson	Amundson

Black Hills Winter Ski Seminar

You have received one mailing to date regarding this fine Academy scientific session scheduled for The Holiday Inn of the Northern Hills February 2-4, 1978. Send in your registration now. This meeting is planned for your continuing medical education needs. A full page ad appears in this issue.

21ST ANNUAL RUIDOSO FAMILY PRACTICE SEMINAR

July 17-20, 1978. 21st Annual Ruidoso Family Practice Seminar, sponsored by the New Mexico Chapter of the American Academy of Family Physicians. Scientific program by the University of Texas School of Medicine at San Antonio. AAFP Prescribed Credits and Category 4 by the New Mexico Board of Medical Examiners (number of hours to be announced in near future). Headquarters, Inn of the Mountain Gods at Mescalero, New Mexico, on the Mescalero Apache Indian Reservation three miles from Ruidoso, New Mexico. For information contact Bob Reid, Convention Director, P. O. Box 456, Sunland Park, NM 88063 or telephone (915) 533-3449.

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While the Medical Necessity Program is the responsibility of the Blue Shield Association, these specialty groups working in their respective areas of practice have voluntarily assisted in the programs, by helping identify procedures which are, in most circumstances, of dubious current usefulness.

The following is a list of those procedures already identified:

Bronchoscopy—with injection of contrast medium for bronchography

Bronchoscopy—with injection of radioactive substance

Ligation of internal mammary arteries, unilateral

Ligation of internal mammary arteries, bilateral

Radical hemorrhoidectomy, Whitehead type, including removal of entire pile bearing area

Omentopexy for establishing collateral circulation in portal obstruction

Kidney decapsulation, unilateral

Kidney decapsulation, bilateral

Perirenal insufflation

Nephropexy: fixation or suspension of kidney (independent procedure), unilateral

Circumcision, female

Hysterotomy, non-obstetrical, vaginal

Supracervical hysterectomy: subtotal hysterectomy, with or without tubes and/or ovaries, one or both

Uterine suspension

Uterine suspension, with presacral sympathectomy

Ligation of thyroid arteries (independent procedure)

Hypogastric or presacral neurectomy (independent procedure)

Angiocardiology, single plane, supervision and interpretation in conjunction with cineradiography

Angiocardiology, multi-plane, supervision and interpretation in conjunction with cineradiography

Angiocardiology, utilizing CO₂ method, supervision and interpretation only

Angiography—coronary, unilateral selective injection supervision and interpretation only, single view unless emergency

Angiography—extremity, unilateral, supervision and interpretation only, single view unless emergency

Protein bound iodine (PBI)

Icterus index

Basal metabolic rate (BMR)

Phonocardiogram with interpretation and report, and with indirect carotid artery tracing or similar study

Ballistocardiogram

Fabric wrapping of abdominal aneurysm

Extra-intra cranial arterial bypass for stroke

Fascia lata by stripper for lower back pain

Fascia lata by incision and area exposure, with removal of sheet for lower back pain

Ligation of femoral vein, unilateral or bilateral for post-phlebitic syndrome

Excision of carotid body tumor, with or without excision of carotid artery for asthma

Sympathectomy, thoracolumbar, unilateral or bilateral for hypertension

Sympathectomy, lumbar, unilateral or bilateral for hypertension

Splanchnicectomy, unilateral or bilateral for hypertension

We do not recommend that physicians categorically discontinue these procedures. Almost every procedure can be medically justified in a specific instance. We do recommend, however, that each physician determine whether the results of any procedure justify the cost.

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"Doctor Jeckel and Doctor Greed"

Introduction

Per anonymous and less than unanimous request this column is written for publication in the SDJM with the intent to bring to you some things of philosophic context, some bits of poetry, some quotes, some antidotes and some insight into the hangups and some humorous interpretation on the nature of the Doctor, the man, the image. Some chiding, some probing, some serious and much light comment will be made. Contributions to the column are solicited and welcome within the limits of space allotted. Send them to: Winston B. Odland, M.D., 1440 15th Ave. NW, Aberdeen, South Dakota 57401.

Current political upheaval being what it is and the attacks which are delivered on our profession, we have all become a little introspective and stop to examine the spectrum of our image from good to bad. With this in mind

The Nature of Man

If it were so
I would like to know,
Must man see weakness
To be kind?
And must he find strength to be weak?
And is it so
That he is last to know
About himself,
The Image to seek?

W. Odland

(continued from page 2)

Third Annual Vail General Surgery Conference, The Mark, Vail, CO, March 11-18. Contact: Beth Israel Hosp. Conference & Institute Program, 1818 Gaylord St., Denver, CO 80206.

Cardiology Today, U. of Iowa School of Medicine, Iowa City, IA, March 13-16. Fee: \$250. Category I AMA credits. Contact: Carl White, M.D., Dept. of Int. Med., NT 1018 University Hosp., Iowa City, IA 52242.

Chemotherapy, V.A. Hospital, Fort Meade, SD, March 16. 1 elective hr. CME. Contact: Mr. Christenson, Adm.Asst/Chief of Staff, Fort Meade, SD.

Third Annual Vail Internal Medicine Conference, The Mark, Vail, CO,

March 18-25. Contact: Beth Israel Hosp. Conference & Institute Program, 1818 Gaylord St., Denver, CO 80206.

First Annual Vail Urology Conference, Lion Square Lodge, Vail, CO, March 18-25. Contact: Beth Israel Hosp. Conference & Institute Program, 1818 Gaylord St., Denver, CO 80206.

Primary Care in Internal Medicine, Aspen, CO, March 20-24. Contact: Off. of Postgrad. Med. Ed., U. of Colo. School of Med., 4200 E. 9th Ave., Cont. C295, Denver, CO 80262.

Hematology, Mayo Foundation Outreach Seminar, McKennan Hosp. Aud., Sioux Falls, SD, March 24-25. AMA Category I credits. Contact: Dir. of Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101.

More than a play on words, and would it be thought-worthy to replace the word (weak) in line five with compassionate? Does embarrassment align itself with compassion in some lives?

A quote for all and a request for approval of the redundant thought.

"Motivation,
is largely,
an affair
of the Self."

In a nostalgic vein one last set of verse which was written in a reflective mood during a solitary luncheon at the Oak Room of the old Alonzo Ward Hotel in Aberdeen amidst the background strains Glen Millers Chattanooga Choo Choo.

Time and Life

What feeling squeezes within your breast
When days gone by, perhaps the best,
Are brought to view,
Recalled from old in place of new?
Nostalgia, difficult to explain,
Is tied to lives with bonds of pain.
Strains of music which then were Now
And now are dead,
Remind the soul within one's head
that Life is Time and time has
passed and with each successive day
at last . . . at last . . . at last . . .

W. Odland

With your indulgence I will be back with some portraits of Doctor Greed and a poem dedicated to our genial friend R. G. Gere, M.D., Mitchell, South Dakota.

W. Odland
"Oddly"

4th Annual Pediatric Review for New Health Practitioners and Physicians, March 31-April 1. Contact: Off. of Postgrad. Med. Ed., U. of Colo. School of Med., 4200 E. 9th Ave., Cont. C295, Denver, CO 80262.

New Orleans Graduate Medical Assembly, Fairmont, New Orleans, LA, March 31-April 4. AMA Category I credits. Contact: Ex. Dir., New Orleans Grad. Med. Assembly, 1430 Tulane Ave., New Orleans, LA 70112.

April

Iowa Medical Society Annual Meeting, U. of Iowa School of Med., Iowa City, IA, April 4-6. Contact: Richard Caplan, M.D., Assoc. Dean for CME, U. of Iowa School of Med., Iowa City, IA 52242.



CLINICOPATHOLOGICAL CONFERENCE

From the Intern and Resident Teaching Conferences at the Sioux Valley Hospital, conducted by the Department of Pathology of the Hospital and of the School of Medicine of the University of South Dakota



THIRTEEN YEAR OLD BOY WITH FEVER AND INGUINAL LYMPHADENOPATHY

James Nielsen, M.D.*
Discussor

John F. Barlow, M.D., FCAP**
Pathologist, Editor

Case No. 719205

This 13-year-old Caucasian male was admitted to Sioux Valley Hospital with a chief complaint of pain in the right groin of one week duration.

The patient was completely well until one week before admission when he slipped playing basketball and experienced pain in the right groin. Two days later he saw a physician and a small tender mass was noted in the right groin which did not respond to warm compresses. The nodes enlarged markedly and involved the right upper thigh and groin area. The mass was slightly tender, fixed, and nodular. Fever and weakness became associated with the mass and at one visit he had a temperature of 102°F. The remainder of the review of systems was unremarkable. He did have contact with both cats and dogs but the animals had remained well. The boy had had good mental and physical development and had had no previous illnesses.

PHYSICAL EXAMINATION: Admission temperature 102°F, pulse 92/min. and regular, respiration 20/min. and regular, blood pressure 106 systolic and 72 diastolic. Examination of the head and neck revealed no palpable adenopathy and the thyroid was within normal limits. The chest was clear to auscultation and percussion. The heart was normal in size with a normal sinus rhythm and no murmurs. The liver was not palpable but the spleen was palpable three finger breadths below the costal margin and slightly tender. There was a 6 x 3.5 cm. right inguinal mass medial to the iliac crest above the inguinal canal. The mass was not palpable on rectal examination but one examiner suspected that there was a retroperitoneal component. There was a mass in the right femoral canal also which was thought to represent a lymph node.

LABORATORY DATA: Urinalysis - yellow, turbid, specific gravity 1.024, pH 5.0 negative for protein; glucose inhibited (ascorbic acid); negative for ketone bodies, bile and hemoglobin; sediment 1-3 wbc/bpf, hemoglobin 13.4 gms/dl, red count 4.77 million/mm³, hematocrit 38 vols/dl, mean corpuscular hemoglobin 28 micromicrograms, mean corpuscular volume 78 cubic micra, mean corpuscular hemoglobin concentration 36%, total leukocyte count 2,800/mm³ with 17% segmented neutrophils, 30% neutrophilic bands, 55% lymphocytes. The red cells were unremarkable on smear, platelet count 170,000/mm³ and zetacrit 49% (normal 50-54%). A monospot test was nega-

tive. pH 7.44, pCO₂ 32 torr, CO₂ content 22 meq/L, sodium 137 meq/L, potassium 4.2 meq/L, chloride 94 meq/L. Lactic dehydrogenase was 600 int. u/L (normal up to 270 int. u/L), alkaline phosphatase, total bilirubin, calcium, total protein, inorganic phosphorus, glucose, urea nitrogen, creatinine, uric acid and cholesterol were within normal limits. Aspartate aminotransferase (SGOT) was 66 int. u/L (normal up to 50 int. u/L). Bone marrow examination showed reduced iron stores and scattered atypical histiocytes in the marrow without erythrophagocytosis. Chest film showed hilar adenopathy of moderate degree. Mediastinal lymph node biopsies were variously interpreted as chronic active lymphadenitis and histiocytosis. A throat culture revealed normal flora. A urine culture showed no growth after 48 hours. Six blood cultures revealed no growth. Skin tests for coccidioidin, blastomycin, and intermediate strength mantoux (PPD) revealed no induration. Agglutinins for salmonella, brucella, and tularemia revealed no titer. Protein electrophoresis was unremarkable. Serum immunoelectrophoresis was within normal limits. Immunoglobulins revealed IgG 700 mgs/dl (normal 840-1390 mgs/dl) IgA 300 mgs/dl (normal 59-505 mgs/dl), IgM 310 mgs/dl (normal 37-183 mgs/dl). A serologic test for syphilis was nonreactive. A prothrombin time was 14.0 seconds with a control of 13.0 seconds. A fluorescent antinuclear antibody test was less than 1:10 dilution. Cytologic examination of the urine for cytomegalic inclusion disease was negative three times. A second lymph node biopsy showed sinus histiocytosis and questionable abnormal histiocytes in the sinuses. A bone marrow examination showed an abnormal monocytoid histiocytoid proliferation within the bone marrow. A Sabin dye test for toxoplasmosis was less than 1:64. A spinal fluid examination revealed clear colorless fluid under normal pressure with two red cells and no white cells. Protein was 32 mgs/dl, sugar 49 mgs/dl. Repeat blood platelet counts continued in the low normal range; repeat white count ranged from 2600 to 3800/mm³.

Review of bone marrow preparations and lymph node biopsies from the mediastinum, retroperitoneum, and inguinal regions were reviewed and a diagnosis was rendered. The patient was in the hospital for a 30 day period.

DR. NIELSEN: The differential diagnosis in this case is between an infectious process and a neoplastic process. I will discuss the possibility that this patient had an infectious disease first. Considerations would be toxoplasmosis, infectious mononucleosis, brucellosis, psittacosis, and tuberculosis. He did give a history of exposure to animals and birds. Since animals can transmit diseases which can

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result in enlargement of lymph nodes with histiocytic proliferation, a number of possibilities arise. Organomegaly can also occur.

Disseminated toxoplasmosis can be seen in the newborn and can be fatal. It would be rather unusual as a disseminated disease in a 13-year-old who was not on suppressive therapy. However, it can cause lymphadenopathy and is a possibility in this case. Normally, there is a leukocytosis with a lymphocytosis and not a leukopenia. This would be a point against the diagnosis of toxoplasmosis. Also in toxoplasmosis, the cervical and inguinal nodes are often enlarged but the mediastinal nodes are not. There were enlarged mediastinal nodes in this case. I would also have expected a higher titer against toxoplasmosis than 1:64.

Fungus disease is a possibility and skin tests for coccidioidomycosis and histoplasmosis were performed but were negative. The skin test for blastomycosis dermatitidis is unreliable. In any case, one would have to postulate that the patient had disseminated coccidioidomycosis or histoplasmosis. We have negative skin tests but these can be negative in disseminated disease. There are no other clues such as cultures to suggest mycotic infection.

Brucellosis and psittacosis are other possibilities, but often start with more sudden onset of fever, headache, and generalized adenopathy. Brucellosis can cause splenomegaly but the patient's titer against brucellosis was negative. In regard to psittacosis, he does not really have a good contact with sick birds.

Infectious mononucleosis is unlikely because there was no history of tonsillitis, pharyngitis, and there were no abnormal lymphocytes seen on the peripheral blood smear. The monospot test was also negative. I would also have thought that this degree of lymphadenopathy would be unusual in infectious mononucleosis although the mild splenomegaly could certainly be seen in that disease.

The first group of diseases in the neoplastic category that one would have to consider are the pathologic entities categorized as histiocytosis X. These include Letterer-Siwe disease (the most serious), Hand-Christian-Schuller disease, and eosinophilic granuloma. The histiocytosis X group is usually accompanied by lytic bone lesions, a phenomenon we did not see in this case. The more disseminated forms of the disease, such as Letterer-Siwe disease usually occur under the age of three. Also, on microscopic examination, in histiocytosis X, the histiocytes appear normal and not abnormal or atypical, as in this case. The nuclei are lobulated with even distribution of the chromatin without prominent nucleoli. There is abundant eosinophilic cytoplasm. Therefore, I think histiocytosis X is an unlikely

diagnosis.

One must consider histiocytic lymphoma. However, the lymph nodes should have shown distortion of the architecture with extension of atypical lymphocytes beyond the lymph node capsule. This is not what is described in the lymph nodes of this case. Patients with histiocytic lymphoma usually have a normal bone marrow. This child had an abnormal bone marrow early in the course of his disease.

What about Hodgkin's disease? There is no history of chills, night sweats, or weight loss. Reed-Sternberg cells were not seen. Patients with Hodgkin's disease usually have a lymphopenia which was not present in this case.

A non-Hodgkin's lymphoma would be unusual as I would not expect to see a mixed cell population in the lymph nodes. The most common presentation of a non-Hodgkin's lymphoma is a poorly differentiated lymphocytic lymphoma with a large mediastinal mass and insignificant peripheral lymphadenopathy. This is certainly not the case here. Children with non-Hodgkin's lymphoma usually have a markedly abnormal bone marrow by the time they have splenomegaly and an abnormal peripheral smear. However, this child's findings on the peripheral smear and bone marrow are not diagnostic.

A curious entity which we should mention is sinus histiocytosis with massive lymphadenopathy. However, the biopsy should have given us little problem because there is no atypia to the cells in the lymph node sinuses in this entity which usually presents as massive cervical lymphadenopathy.

Metastatic carcinoma can involve the sinuses of the lymph nodes but I would expect it to be more easy to identify than has been described here.

Hairy cell leukemia or leukemic reticuloendotheliosis is another possibility which usually is associated with pancytopenia and massive splenomegaly. This can usually be diagnosed from the histology of a markedly enlarged spleen or from the liver biopsy. Bland histiocytes will involve the portal spaces of the liver or infiltrate the spleen but they do not appear atypical, as described in this case. Also characteristic hairy cells appear in the peripheral blood smear of hairy cell leukemia.

This brings us to our final possible diagnosis of histiocytic medullary reticulosis better known as malignant histiocytosis. The disease is more common in males and it is not uncommon in children. The presenting symptoms are usually fever, lymphadenopathy, and weakness, all of which this patient had. The physical findings are fever, lymphadenopathy, and hepatosplenomegaly. The patients may be jaundiced, but this is usually a pre-terminal phenomenon. Groin masses, such as in this case, certainly can

occur and are described in the Stanford series.² The patients often have anemia, leukopenia, and thrombocytopenia. The etiology of malignant histiocytosis is unknown and the survival time is usually about six months. Effective therapy with chemotherapeutic agents has not been found. I should point out that the diagnosis is most usually made from a bone marrow aspirate in which one sees a proliferation of abnormal histiocytes. These histiocytes often exhibit phagocytosis of red cells, platelets, or white cells. This phagocytosis, especially of red cells, is very helpful in arriving at a diagnosis. Phagocytosis was not mentioned in this case. Warnke and Dorfman² point out that a bone marrow aspirate is far superior to a biopsy in making the diagnosis in this disease. The erythrophagocytosis is often much more apparent on the smears. Lymph node biopsy will give a diagnosis in a third to half of the cases. I should point out that lymph node imprints do demonstrate the erythrophagocytosis and should be performed because one cannot see the ingestion of the red cells very well on the sectioned material. These patients all will develop increasing hepatosplenomegaly and often jaundice with impaired liver function. This child's liver function was relatively normal but it can be in the early stages of the disease. The abnormal cells infiltrate the spleen but splenectomy has been only of variable benefit in most of the cases.

DR. NIELSEN'S DIAGNOSIS:

Malignant Histiocytosis

DR. BARLOW: I have to admit that although the diagnosis was considered, I could not come to the conclusion that this was malignant histiocytosis from the lymph node biopsy. Dr. Robert Hartsock, consultant from Pennsylvania, made the diagnosis. The diagnosis was also confirmed at the University of Minnesota, by Dr. Dehner. I would point out, at this time, that I do not feel particularly chagrined at having had difficulty with this case. The diagnosis is difficult to make since only scattered abnormal histiocytes are seen in the sinuses of the lymph nodes without the other malignant criteria usually seen in malignant disorders of lymph nodes. Since the disease is uniformly fatal and relatively rare, I thought consultation was mandatory.

The first slide shows atypical histiocytes in the sinus of the lymph node. The absence of striking erythrophagocytosis in this case or phagocytosis of platelets or white cells was one of the major deterrents to an earlier diagnosis. (Fig. 1) Two bone marrow aspirates were done. The first bone marrow aspiration did show scattered atypical histiocytes but these cells were much more obvious in the second bone marrow preparation (Fig. 2)

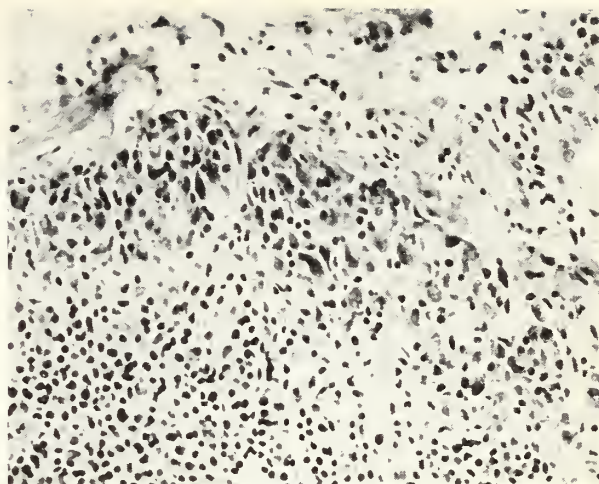


Figure 1

Marginal sinus of lymph node with atypical cells showing pleomorphic hyperchromatic nuclei.

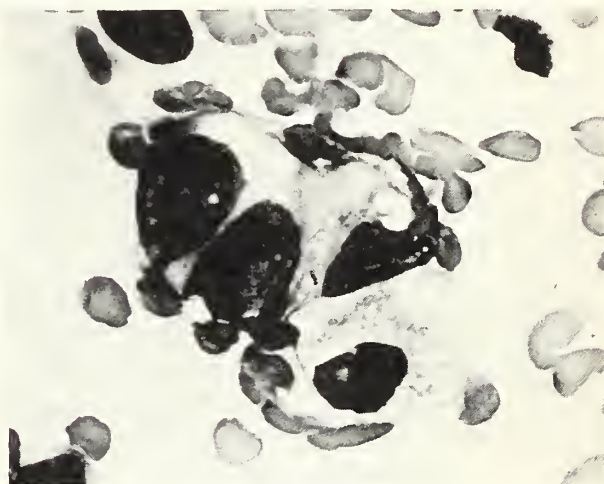


Figure 2

Cluster of malignant cells in bone marrow aspirate.

Diagnosis in this case rests on: 1) identifiable histiocytes in the subcapsular or medullary sinuses and/or in the lymphoid parenchyma, 2) cytologic atypia, 3) phagocytosis, 4) no cohesive mass of histiocytes, 5) plasma cells few to many, 6) no capsular invasion. The patient certainly fits in this broad histologic spectrum but had no phagocytosis. The disease is relatively rare. A case very similar to this one was reported in the *New England Journal of Medicine* in the case records of the Massachusetts General Hospital. That case was only the second case they had seen in that hospital over a long period of time.

There are two large series of cases of malignant histiocytosis reported. The first is by Bryne and Rappaport.¹ They reviewed 24 cases. Sixteen were male and 8 were female with an age range of from 3 to 62 years. Warnke, Kim and Dorfman reported on 29 patients with a similar age and sex distribution. In both series fever, lymphadenopathy, and

weakness were the predominant symptoms. Hepatosplenomegaly was common but not invariable. Although pancytopenia occurred in many cases, a depression of one or more of the cellular elements of the peripheral blood was seen in almost all cases. Skin lesions can occur in this disease often as purple macules which show the atypical histiocytes characteristic of this disease on biopsies of the skin.

FINAL ANATOMIC DIAGNOSIS MALIGNANT HISTIOCYTOSIS

Dr. Thatcher, would you care to comment on this case?

***DR. H. GILBERT THATCHER:** This patient had many of the characteristic symptoms. He had a fever ranging from 102° to 106°F. each day. He had a progressive weight loss of 20 pounds and had a rapid downhill course with weakness during his hospital course.

****DR. KEVIN WYCOFF:** Did this occur right at admission?

DR. THATCHER: Yes, There are several disturbing features of this disease. The diagnosis is difficult as illustrated in this case because the criteria are not absolute. Another distressing problem is that the disease is uniformly fatal. This patient has responded dramatically to chemotherapy and is now at a six months follow-up which is the average length of survival for most of these cases. I have seen only four previous cases of malignant histiocytosis in twenty years of experience. Skin nodules were mentioned and these are, indeed, purple nodules which were present in two of the cases I have seen.

Therapy in this disease has been most unsatisfactory. After calling several centers for ideas, I finally settled on a combination of chemotherapeutic agents called "CHOP". This consists of Vincristine, Prednisone, Cylophosphamid and Adriamycin. This therapy has been used with good success in some of the histiocytic lymphomas and therefore might be effective in malignant histiocytosis. There have been nine patients treated at Stanford as reported in the last year with a mean survival of over 14 months. This series included mostly adults. The University of Minnesota has treated five patients, all of whom went into remission. Two of these were children. It was hard to tell from these patients how long a remission will be obtained. The above therapy is very toxic and the drugs are given intermit-

tently every three weeks. The patient has just completed a course; and, as I said, had a dramatic response with disappearance of fever, weight gain, and increased feeling of well being. He now looks like a healthy 13-year-old boy.

I should mention before I get too enthusiastic about our therapy that there have been case reports of single drug therapy with long term survival. We are certainly hoping for the unusual prolonged response in this case. I have never seen or read anything which has given any suggestion of the etiology of this disease. The diagnosis was extremely difficult in this case with the absence of the typical phagocytosis.

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Clinicopathological Conference
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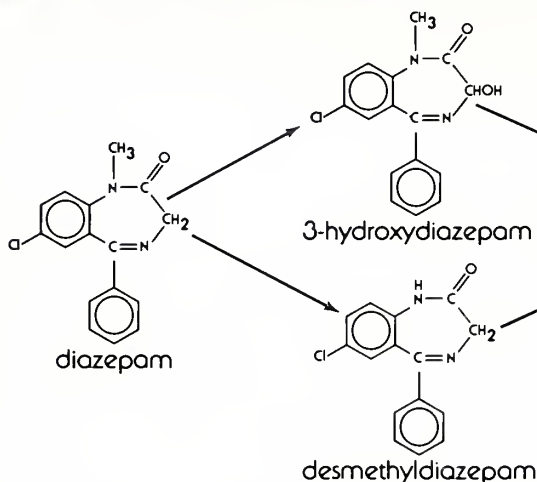
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Future Meetings

March

Immunohematology and Blood Transfusion, Sheraton-Ritz Hotel, 315 Nicollett Mall, Minneapolis, MN, March 8-10. Fee: \$135. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 412 Delaware St., SE, Minneapolis, MN 55455.

Psychiatry for Practicing Physicians, Nolte Center for Continuing Ed., 315 Pillsbury Dr., U. of Minn., Minneapolis Campus, March 16-17. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 412 Delaware St., SE, Minneapolis, MN 55455.

Allergy and Clinical Immunology, Mayo Memorial Aud., U. of Minn., Minneapolis Campus, March 16-18. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 412 Delaware St., SE, Minneapolis, MN 55455.

Second National Conference on Aging and Blindness, Atlanta, GA, March 27-30. Fee: \$25. Contact: Dorothy Demby, Am. Found. for the Blind, 15 W. 16th St., New York, NY 10011.

Cardiopulmonary Diseases, Coffman Memorial Union Theatre, U. of

Minn., Minneapolis Campus, March 30-April 1. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 412 Delaware St., SE, Minneapolis, MN 55455.

April

34th Annual Congress of the American College of Allergists, Las Vegas Hilton Hotel, Las Vegas, NV, April 1-6. 30 hrs. AMA Category I credits. Fee: \$75-members; \$190-non members. Contact: Frances P. White, Ex. Sec., Am. Col. of Allergists, 2141 14th St., Boulder, CO 80302.

Pediatric Challenges, Minneapolis Children's Health Center, 2525 Chicago Ave., Minneapolis, MN, April 7. Fee: \$25. 4 hrs. prescribed credit AAFP. Contact: Drs. Grandle & Olness, Children's Health Center, Inc., 2525 Chicago Ave., Minneapolis, MN 55404.

Home Study Course in Immuno-deficiency Diseases, sponsored by U. of Wisconsin School of Medicine, April 17-June 6. 26 hrs. AMA Category I credits. Contact: R. H. Hansen, CME, 446 WARF Bldg., 610 N. Walnut St., Madison, WI 53706.

Surgery, U. of Colorado School of Medicine, Denver, CO, April 20-21. Contact: Office of Postgraduate Med. Ed., U. of Colorado School of Medicine, 4200 E. Ninth Ave., Cont. C295, Denver, CO 80262.

Cardiovascular Diseases, Mayo Foundation Outreach Seminar, McKennan Hosp., Sioux Falls, SD, April 21-22. 4 hrs. Category I credits. Contact: Dir. of Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101.

May

Cardiology Today, U. of Iowa College of Medicine, Iowa City, IA, May 8-11. AMA Category I & AAFP credits. Contact: Carl W. White, M.D., Dept. of Int. Med., NT 1018 University Hosp., Iowa City, IA 52242.

Eighth Annual Meeting of the Great Plains Organization for Perinatal Health Care, "Perinatal Care from Community to Center", Radisson South Hotel, Bloomington, MN, May 14-17. Contact: Mrs. Virginia Rittenour, Great Plains Organization, 420 Delaware St., S.E., Box 50, Minneapolis, MN 55455.



CLINICOPATHOLOGICAL CONFERENCE

From the Intern and Resident Teaching Conferences at the Sioux Valley Hospital, conducted by the Department of Pathology of the Hospital and of the School of Medicine of the University of South Dakota



TWO YEAR OLD FEMALE WITH VOMITING, ANEMIA, UREMIA OF SUDDEN ONSET

Charles D. Sullivan, M.D.*
Discussor

John F. Barlow, M.D.**
Pathologist-Editor

CASE No. 609381

This two-year-old white female was referred to Sioux Valley Hospital because of fever and vomiting.

The parents stated that one week before admission, the patient was irritable and vomited frequently. The urine also was noted to be dark. The patient had also had anorexia and refused to swallow liquids. Four days prior to admission she developed fever up to 104.8°F. In the three days prior to admission, vomiting continued and she passed urine which was coffee colored only twice. She developed severe pallor, sores in the mouth, and continued to vomit. She was noticed to be clinically dehydrated. Hemoglobin at the outside hospital was 10.7 gms/dl, white count 6,000/mm³. The patient had been in excellent health and was the product of a full term normal delivery and pregnancy. She had had no previous medications or allergies. There were normal developmental milestones in the patient's history.

PHYSICAL EXAMINATION: temperature 98.6°F, pulse 104 per minute and regular, respirations 24 per minute and regular. Blood pressure 104 systolic and 50 diastolic, weight 28 lbs. The patient was a very pale sluggish female who preferred to sleep but could be aroused. Examination of the head and neck revealed a slightly infected left tympanic membrane and small white cratered ulcerative lesions scattered in the buccal mucosa, which bled when scraped. The posterior pharynx was clear. The chest was clear to auscultation and percussion. The heart was of normal size and there was a regular rhythm. There was a grade II (six grades) rasping systolic murmur heard best at the base of the precordium. Examination of the abdomen revealed no palpable organs, masses, spasm or tenderness. Neurologic examination revealed the cranial nerves to be intact and there were no localizing neurologic findings. The skin was unremarkable except for a petechial response to placement of the tourniquet.

LABORATORY DATA: Admission urinalysis, dark amber and turbid, specific gravity 1.016, pH 6.0, protein 4+, negative for glucose, reducing substances, and bile; there was a moderate amount of ketones and a large amount of hemoglobin. In the urinary sediment, there were 40-80 white cells/hpf and 5-7 red cells/hpf. There were 1-2 hyaline casts and 0-1 white cell casts/pf. Admission hemoglobin was 8.8 gms/dl, red blood count 3.2 million/

mm³, hematocrit 24 vols/dl, mean corpuscular hemoglobin 27 micromicrograms, mean corpuscular hemoglobin concentration 37% total leukocyte count 5,300/mm³ with 61% segmented neutrophils, 5% neutrophilic bands, 2% eosinophils, 26% normal lymphocytes and 6% monocytes. Erythrocyte sedimentation rate was 44 mm/hr., reticulocyte count 1.6% and platelet count 15,000/mm³. Examination of the smear showed occasional spherocytes and many fragmented cells on this smear with so-called helmet cells and marked anisocytosis. The red cells were normochromic. The platelets were markedly decreased. The serum hemoglobin was grossly elevated. A serum glutamic oxaloacetic transaminase was 189 units (normal 0-35 units). Fibrinogen was 170 mgs/dl (normal 170-410 mm/dl). Partial thromboplastin time was 25 seconds (control 27 seconds). A pH was 7.28, PCO₂ 50 mm mercury. CO₂ content 24 meq/L, sodium 133 meq/L, potassium 4.2 meq/L chloride 101 meq/L, serum osmolality was 300 mosm/kg (normal 270 to 300 mosm/kg). The direct Coombs was negative. A Ham acid hemolysis test was negative. The blood urea nitrogen was 115 mgs/dl creatinine 2.0 mgs/dl, prothrombin time 11.5 seconds (control of 12.0 seconds). An osmotic fragility of the red cells was within normal limits. A urine culture and blood culture revealed no growth. A throat culture showed normal flora. One stool for occult blood was negative.

HOSPITAL COURSE: After admission, the patient was heparinized. Repeat urines over the next several days showed decreasing abnormality. A urinalysis on the third day after admission was yellow, clear with specific gravity 1.003, pH 6.0, negative for protein, glucose, reducing substance, ketone bodies, and bile. There was a small amount of hemoglobin. The sediment showed 10 to 12 white cells/hpf and 15 to 25 red cells/hpf. On the sixth hospital day, the urine had a specific gravity of 1.016, pH of 8.0 and was negative for protein, glucose, reducing substance, ketone bodies, and hemoglobin. The sediment showed 3-6 white cells/hpf, 0-1 hyaline cast. Hemoglobin dropped to 6.0 gms/dl two days after admission but after a transfusion of 300 cc's of blood rose to 13.1 gms/dl and was normal at discharge. The platelets gradually rose until five days after admission, they were 265,000/mm³. The blood urea nitrogen dropped rapidly to 9 mgs/dl five days after admission. The electrolytes and pH were also within normal range several days after admission. The patient was discharged in good health.

DR. SULLIVAN: Before launching into a discussion of this case I would like to ask a few questions. In the protocol it states that the patient voided dark urine twice. I would be extremely interested to know whether this means that the patient voided only

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twice and was probably oliguric or whether the dark urine was passed only twice. Do you know?

DR. BARLOW: No.

DR. SULLIVAN: I have assumed that the patient received no medications at all prior to admission. Is that correct?

DR. BARLOW: Yes.

DR. SULLIVAN: The left tympanic membrane was infected and it is unclear to me whether the patient had otitis. The oral lesions could have represented thrush or herpes infection. The heart murmurs certainly could have been on the basis of the anemia described. I call your attention to the significant drop in hemoglobin from 10.7 gms/dl to 8.8 gms/dl as described in the protocol. Did the patient have any test for endotoxin in the blood stream?

DR. BARLOW: None were recorded.

DR. SULLIVAN: Is there a reticulocyte count recorded after the initial reticulocyte count?

DR. BARLOW: No.

DR. SULLIVAN: Did the patient have a haptoglobin determination?

DR. BARLOW: One is not recorded.

DR. SULLIVAN: Basically we are presented with a two-year-old girl who was in excellent health until she had an episode of gastroenteritis and then developed dark urine and studies which indicated a hemolytic anemia. The drop in hemoglobin from 10.7 gms/dl to 8.8 gms/dl within a week is certainly significant in this regard with no evidence of blood loss. There was no physical evidence that she was losing blood and a test for occult blood in the stool was negative. With no evidence of blood loss a drop in the hemoglobin this rapid would certainly suggest hemolysis as the mechanism of the anemia. In addition, there is positive evidence for hemolysis. Evidence for this includes hemoglobinemia and the finding of spherocytes, many fragmented cells with helmet cells, anisocytosis and burr cells on the peripheral blood smear. To further substantiate an elevated serum hemoglobin I would have liked to have seen a serum haptoglobin level which certainly should have been low. Another useful test in documenting hemolytic anemia would be an elevated reticulocyte count. This patient's initial reticulocyte count was low but since the hemolysis was rapid, you would expect the reticulocyte index or reticulocyte count not to become elevated for several days. In a patient with uremia the usual elevation of the reticulocyte count could be delayed. I would have expected the patient to have had¹ an elevated reticulocyte count later in the course of the disease reflecting compensation for the hemolysis. The initial low¹ reticulocyte count certainly does not rule out a hemolytic anemia. With the presence of

hemoglobin both in the serum and urine and the abnormal smear as well as the sudden drop in hemoglobin, I believe a hemolytic process is documented.

There are varied classifications for hemolytic anemia. The one I have chosen divides hemolytic anemias into those secondary to extracorporeal red cell defects and those due to intracorporeal red cell defects. The intracorporeal group of hemolytic anemias are usually hereditary in nature and include defects in the red cell membranes such as hereditary spherocytosis, hereditary elliptocytosis and paroxysmal nocturnal hemoglobinuria. There are other membrane defects. The negative Ham acid hemolysis test rules out paroxysmal nocturnal hemoglobinuria which is usually a defect acquired by the red cell membrane in adult life. The patient did not have elliptocytes and an osmotic fragility test of the red cells was within normal limits excluding hereditary spherocytosis. The anemias I have just mentioned are usually associated with a much more chronic course than has been described here as well as a chronically elevated reticulocyte index. We have no evidence of other chronic hemolytic anemias or hemoglobinopathies.

The other major type of hemolytic mechanism is extracorporeal in nature. One of the most common anemias in the group is explained by the production of an autoantibody to red cells. This may either be idiopathic autoimmune hemolytic anemia or hemolytic anemia secondary to various drug therapies. The direct antiglobulin or Coombs test is usually positive; but, in this case, it was negative. Non-immune causes of extracorporeal hemolytic anemia include thermal injury and trauma to the red cells such as in march hemoglobinuria, and the so-called microangiopathic hemolytic anemia. It is the microangiopathic group of anemia caused by traumatic intravascular injury to the red cells which best explains the facts of the present case. The best example of the microangiopathic process is in disseminated intravascular coagulation where small vessels are narrowed by fibrin strands which produce fragmentation of the red cells precipitating the production of the hemolysis as well as an abnormal peripheral smear showing fragmented cells. Abnormalities of the small vessels producing the microangiopathic hemolysis occur in many diseases. These include malignant hypertension, diffuse carcinomatosis, renal cortical necrosis, and many other entities. The anemia of thrombotic thrombocytopenic purpura and some cases of gram negative sepsis have also been explained on the basis of small vessel disease. The initial course in this patient certainly could reflect gram negative sepsis in the child. One

would expect the white count to be more elevated but the patient had a fever and vomiting. Certainly gram negative sepsis should have to have been included in the differential diagnosis at least in the initial phases of the patient's disease. A blood culture, however, was negative and this excludes gram negative sepsis.

In review of the lab work there were several other significant findings. One was severe thrombocytopenia which was manifested clinically by a petechial response to the placement of a tourniquet. Thrombocytopenia is also seen in diseases of the microvasculature as in disseminated intravascular coagulation (DIC). However, the diagnosis of DIC becomes difficult because the patient had a normal prothrombin time and partial thromboplastin time.

The other significant abnormal laboratory values were the elevated blood urea nitrogen, and creatinine as well as abnormal urinalysis suggesting several renal diseases. A look at the blood urea nitrogen-creatinine ratio suggests possible prerenal azotemia because the urea nitrogen is elevated much out of proportion to the creatinine by a factor of 60. Prerenal azotemia would not be unexpected in view of the child's possible dehydration secondary to gastroenteritis. However, the markedly abnormal urinary sediment would suggest another explanation other than prerenal azotemia. Pylonephritis certainly could present with a sediment showing pyuria, hematuria with white cell and hyaline casts. It is noteworthy that the urine culture was negative and the child was also on no medications to suggest drug induced nephritis. Although the negative blood culture and afebrile hospital course tend to exclude gram negative sepsis, I still think that this diagnosis must be kept in mind.

When one sees a microangiopathic hemolytic anemia in conjunction with renal disease, one comes to the diagnosis of hemolytic uremic syndrome, which is the entity I believe this child has. Hemolytic uremic syndrome (HUS) has three basic criteria: 1) primary nephropathy, 2) thrombocytopenia, 3) hemolytic anemia. This child meets all of these criteria. HUS can explain the child's presenting picture as well as the hospital course. To be absolutely certain of this diagnosis, a renal biopsy would be required to rule out glomerulonephritis, drug induced interstitial nephritis, and demonstrate cortical necrosis and/or abnormalities of the renal vasculature seen in HUS. In light of the clinical setting,

I think one can make a diagnosis of hemolytic uremic syndrome even without definitive renal biopsy. Certainly I believe a biopsy was not indicated in this case.

DR. BARLOW: We have no renal biopsy.

DR. SULLIVAN: Although described in adults, the hemolytic uremic syndrome usually occurs in children. I have recently seen a 73-year-old woman who presented with hemolytic anemia, azotemia with markedly abnormal urinary sediment and who subsequently has developed coma, hypotension and has suffered pulmonary embolism. With no particular therapy, this patient's azotemia, anemia and central nervous system signs have disappeared. The urinary sediment is clear. She had no evidence of disseminated intravascular coagulation or thrombotic thrombocytopenic purpura. This case may represent adult HUS.

However, as I have stated, HUS usually occurs in children and is common in certain parts of the world such as Argentina, the Netherlands, South Africa, and California. It is often called the pediatric counterpart of thrombotic thrombocytopenic purpura. HUS is not that rare as there have been cases of this entity in both local Sioux Falls hospitals this year.

*DR. JOHN MALM: Dr. Hosen** has recently admitted two cases, both of whom presented with abdominal pain leading to appendectomies. Both turned out to have hemolytic uremic syndrome.

Dr. Hosen has pointed out to the residents that frequently this syndrome presents as abdominal pain. This has not been stressed in the literature and is something to keep in mind. In epidemic areas such as Johannesburg, South Africa, 15% of the children admitted with the diagnosis of acute glomerulonephritis have HUS. The pathogenesis and etiology of HUS is unsettled. Viral illness due to echoviruses, coxsackie virus and influenza have preceded the disease as well as bacterial infections. HUS has also been a complication of immunodeficiency syndromes. In adults the use of oral contraceptives, malignant hypertension and post partum hemolysis have also been associated with HUS.

There is a deposition of fibrin and granular material in the glomerular capillaries between the capillary endothelium and basement membranes. Recent studies by electronmicroscopy show that there is no basement membrane defect. However, in severe disease the basement membrane and the endothelium may cause collapse of the capillary itself with the formation of vascular obstruction or thrombosis leading to renal cortical necrosis. In HUS the prothrombin time, partial thromboplastin time and fibrinogen are usually normal. These tests differenti-

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ate the disease from disseminated intravascular coagulation in which the above tests are abnormal.

The mechanism of the red cell fragmentation is probably the fibrin strands which damage the red cells. This mechanism is similar in HUS and disseminated intravascular coagulation but most authorities distinguish these two entities. Thrombocytopenia has also been thought to be secondary to platelet damage by the fibrin strand in both entities. Studies with labeled platelets show that they have not been sequestered in the kidneys but are probably damaged and then removed by the reticuloendothelial system. Clinically the HUS has been subclassified into four groups: 1. mildly affected patients do not have a single 24 hour period of anuria. This is why I asked Dr. Barlow about the possibility of oliguria or anuria in this case. If this patient only voided twice in three days certainly this is very close to anuria. 2. The second group includes the severely affected patients who are anuric for more than 24 hours. 3. This group includes those with an inexorable decline in renal function. They become increasingly azotemic and oliguric and develop hypertension. These patients often die from cardiac failure regardless of therapy. 4. The fourth group is recurrent hemolytic uremic syndrome. There is a small group of patients who present with the mild form of the disease but return months or years later with a similar presentation. The second episode may be more severe than the first.

The clinical setting for HUS is a patient who presents with what appears to be gastroenteritis with nausea and vomiting. There may be a symptom-free period of one to ten days. This period of minimal symptoms is not always present and certainly was not seen in the patient under discussion. Whether or not there is a symptom free interval, hemolytic anemia will follow. This may be accompanied by convulsions, oliguria or hemoglobinuria. The patient is often pale with petechiae and is often edematous but may appear dehydrated. Irritability and lethargy are common but convulsions and coma are variable. Hepatosplenomegaly appears in about half the patients but jaundice is uncommon. The hemoglobin levels vary from 3-10 gms/dl but the antiglobulin or Coombs test is usually negative. Anisocytosis, polychromasia and fragmented red cells are common on the smear.

The peripheral blood smear is identical to what was seen in this case. The reticulocyte count did increase as in the case of the 73-year-old lady I spoke about before. The reticulocyte count was low

on admission but climbed to 12% in two weeks. Increase in plasma and urine hemoglobin as well as decreased haptoglobin are typical of HUS with intravascular hemolysis. This white blood cell count is often markedly elevated although it was not in this case. In almost all cases the platelet count is under 140,000/mm³ but rarely falls below 20,000/mm³. The thrombocytopenia lasts from 7-14 days. The degree of renal damage in terms of immediate and long term prognosis is variable. When the child presents with a period of anuria less than 24 hours as in the mild category, no therapy is indicated as the patients often spontaneously recover. However, children in the other three groups often become oliguric and anuric and renal hemodialysis plays a large part in tiding these children through the acute renal process. The mortality rate in the mild group is 0% but in the severe group is 71%.

The appropriate therapy for HUS is still debated. Children in the first group often require no therapy but children more severely affected may require heparinization or use of streptokinase which may alter their course. However, some authorities feel that if the patients can be supported so that their hypertension and renal failure does not become severe, anticoagulation or streptokinase is not likely to play much of a part in useful therapy.

DR. SULLIVAN'S DIAGNOSES

Hemolytic Uremic Syndrome

DR. BARLOW: I thought I would have this case presented although we have no renal biopsy. Certainly I cannot add much to his excellent discussion.

*DR. DENIS FOSTER: Can you see gross hemoglobinemia without a drop in the serum haptoglobin?

DR. BARLOW: I would think that would be quite unusual as hemoglobinemia of any extent should be followed by a drop in the serum haptoglobin.

DR. MALM: What is Ham acid hemolysis test?

DR. BARLOW: The Ham acid hemolysis test was originally described by Dr. Ham of Western Reserve University years ago, when he discovered that red cells from patients with paroxysmal nocturnal hemoglobinuria would hemolyse in an acid environment while normal red cells would not. Apparently in the disease the alternate pathway for complement is activated and the red cells are easily hemolyzed by adherent complement. An easier test for this disease includes the use of low ionic strength media using sucrose. This is often called the sucrose hemolysis test or sugar water test.

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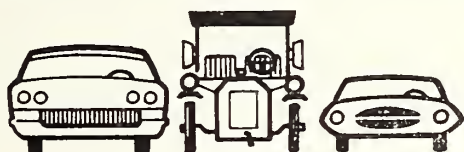
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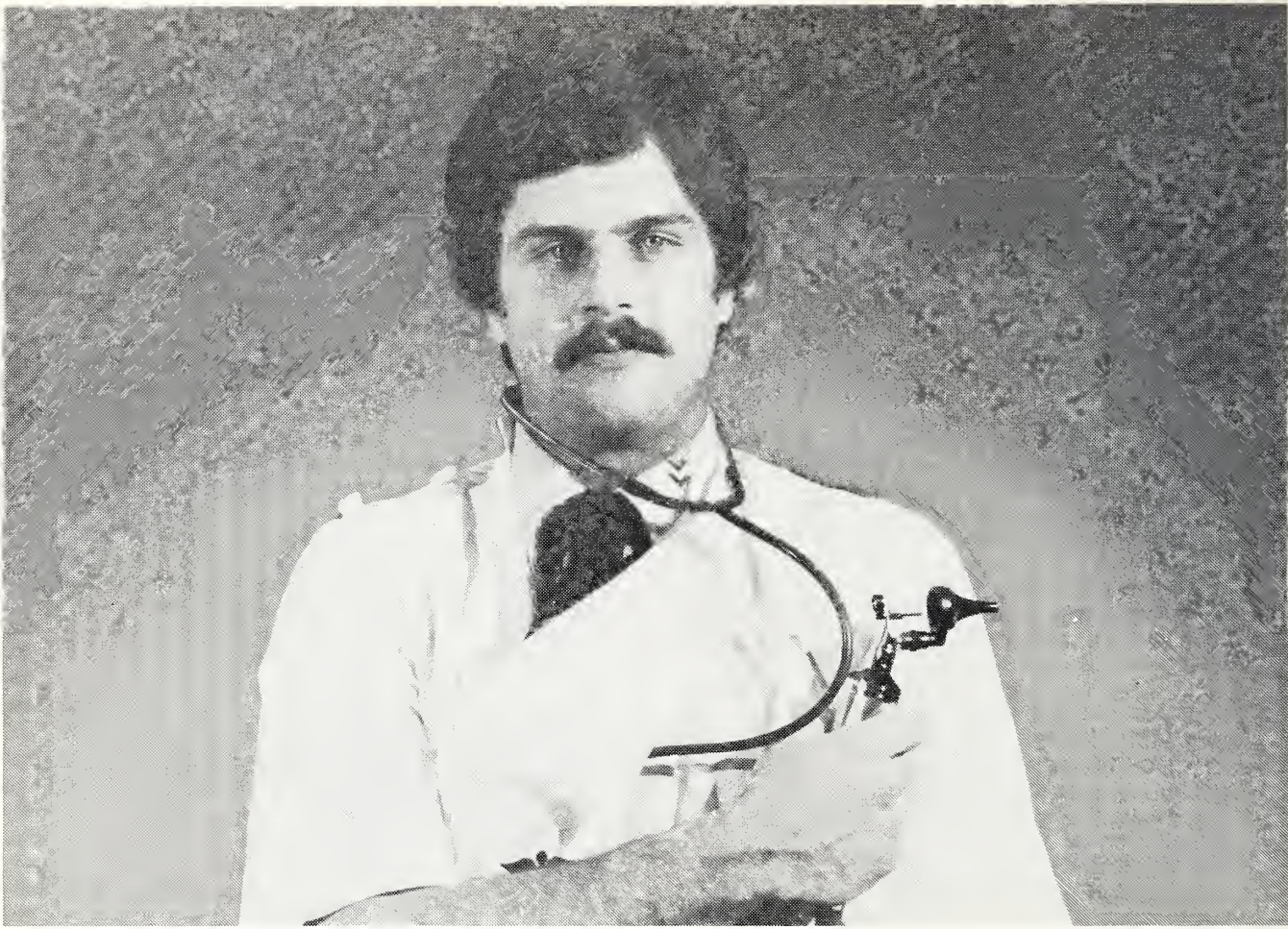
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BILIRUBIN BINDING CAPACITY AND FREE BILIRUBIN IN INFANCY

When bilirubin is produced from hemoglobin breakdown into the unconjugated form, it is bound to plasma proteins, mainly albumin. This unconjugated (indirect) fraction of bilirubin also has a small portion called the free or neurotoxic bilirubin. Subsequently the unconjugated bilirubin is processed by the liver and made into a soluble (direct) form conjugated with glucuronide. It has long been known that the measurement of total bilirubin including free and bound unconjugated or indirect bilirubin as well as conjugated or direct bilirubin or the measurement of bilirubin with fractionation of bilirubin into conjugated (direct) and unconjugated (indirect) forms are not accurate in predicting neurotoxicity. It is the free or neurotoxic unconjugated bilirubin in the infant which can cause brain damage. Since it is known that the bound to free ratio of unconjugated bilirubin is modified by many factors including the presence of acidosis, drugs, age, birth weight, underlying illness, hypothermia, anoxia, hypoglycemia, sepsis, in addition to the level of albumin; direct measurements of the free bilirubin have been described. Unfortunately,

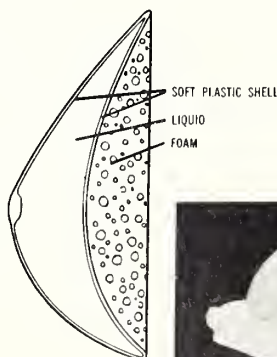
both precision and interpretation of significant levels are still somewhat in doubt due to methodological problems. What is more as the toxic free unconjugated fraction becomes absorbed into the infants brain, the free level may decrease.

At the present time, we do have an indirect method which is reasonably reproducible as an indirect measurement of free bilirubin. This is called the bilirubin binding capacity. In this test, serum is passed through a sephadex column. The heavier bound fraction passes through the column and the unbound or free fraction of bilirubin remains behind. The free bilirubin can be qualitatively measured by a blue color reaction with a diazo dye. When the bilirubin albumin binding capacity is not exceeded as indicated by a negative staining reaction in the column, graded amounts of bilirubin are added to the serum and the serum is again applied to the column until a positive result is obtained. By this method, the ability of the infant's serum to bind free bilirubin can be determined. This test has been used by pediatricians in predicting possible neurotoxicity in jaundiced infants on the basis of the assumption that when albumin binding sites are still available in the serum, free bilirubin will be low, and a significant amount will not pass into the infant's brain.

John F. Barlow, M.D.
Pathologist



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FETAL HEART RATE MONITORING

by

Milo Sampson, M.D.*

Howard (Tom) Gilmore, M.D.**

Loren P. Petersen, M.D.***

Intrapartum Fetal Heart Rate Monitoring

Interpretation of intrapartum fetal heart rate (FHR) monitoring requires a knowledge of the normal and pathological changes in fetal heart rate, uterine contractions, and, in addition, a knowledge of data reliability from various monitoring equipment.

In general, reliable data regarding beat to beat FHR variability can only be obtained with internal (direct) FHR monitoring or sophisticated external (indirect) ultrasound, or abdominal fetal EKG. If there is any question regarding data reliability with external FHR monitoring and possible fetal distress, the membranes should be ruptured, and the direct fetal scalp electrode applied. Internal FHR monitoring will give reliable FHR variability data.

Uterine contractions may be monitored either externally, which will give information regarding frequency and duration of contractions, or internally, which, in addition, will give the amplitude (in mm Hg) of the contractions. For most patients, external monitoring of the uterine contractions will suffice.

The base line FHR is the FHR between contractions. The normal base line FHR is 120-160 beats per minute (bpm). Base line FHR tachycardia (mild 160-180 bpm; severe > 180 bpm) is associated with maternal fever, anxiety, thyrotoxicosis, drug therapy, fetal asphyxia, infection, prematurity, stimulation, and arrhythmias. Base line FHR bradycardia (mild

100-120 bpm; severe < 100 bpm) is associated with late stages of fetal asphyxia, arrhythmias, reflex bradycardia, paracervical block, and drugs such as propranolol.¹ In addition, many normal babies have base line heart rates between 80 and 120 bpm.

Base line FHR beat to beat variability is the change in FHR from one beat to the next. Short term heart rate variability are the changes in FHR occurring over a few seconds. For practical purposes, beat to beat variability and short term variability can be considered as giving the same type of information, and are referred to as FHR variability. Normal FHR variability is usually greater than six beats per minute, and thought to reflect the delicate balance of sympathetic and parasympathetic control mechanisms. Decreased base line FHR variability (< 6 bpm) is associated with prematurity, tachycardia, physiologic sleep, anesthesia, fetal anomalies, arrhythmias, asphyxia, and drugs such as atropine, valium, meperidine, barbiturates, and local anesthetics. Both normal and increased ($> 15\%$ of base line) FHR variability are signs of fetal well-being. Loss of FHR variability is correlated with both acidosis and low Apgar scores.^{2,3,4}

Periodic FHR changes are either accelerations or decelerations in FHR associated with uterine contractions. Hon and Quilligan have defined three types of decelerations based on the shape of the wave and timing of the deceleration relative to the uterine contraction.⁵

Early decelerations occur early in the onset of the contraction, are uniform in shape, return to base-line at the end of the contraction, last less than 90 seconds, usually remain above 100 bpm, are rarely seen before rupture of the membranes, are thought due to fetal head compression, are not

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associated with either base line FHR or acid base abnormality, are considered benign, and atropine, a vagal inhibitor, eliminates decelerations.

Late decelerations occur late in the onset of contraction, are uniform in shape, and return to base line after the end of the contraction. Duration is less than 90 seconds, and base-line usually remains above 100 bpm. They are thought due to decreased fetomaternal exchange, are associated with maternal hypotension, toxemia, and increased uterine activity, are not affected by atropine, are frequently associated with fetal metabolic acidosis and low Apgar score, and, therefore, should always be considered as a sign of fetal distress.

Variable decelerations occur with variable onset relative to uterine contractions, are frequent during the second stage of labor, have variable shape, usually drop below 100 bpm - occasionally to 50-60 bpm, are thought due to cord compression, are variable in duration, are not associated with base-line abnormality, are classified severe if FHR decreases to < 60 bpm and duration of deceleration is > one minute, are associated with fetal acidosis in moderate to severe patterns, and, therefore, should be considered as a sign of fetal distress. Variable decelerations are the most frequent periodic rate pattern, and the most difficult to interpret. If variable decelerations are repetitive or become severe, associated with tachycardia or loss of base-line FHR variability, fetal scalp pH sampling should be performed.

Accelerations in FHR are transient increases in FHR above the base-line. Accelerations are usually uniform in appearance, occur with fetal movement or contractions, and are benign unless repetitive and the increase in FHR is greater than 50 bpm.

The clinical value of intrapartum FHR monitoring is two-fold. The predictability that the five minute Apgar score will be seven or greater is 99% for the fetus with a reassuring heart rate pattern, i.e. normal base-line FHR, normal or increased FHR variability, accelerations in FHR with fetal movement, and no periodic FHR changes. Second, with non-reassuring FHR patterns, i.e. progressive loss of FHR variability, moderate or severe variable decelerations, late decelerations of any magnitude, tachycardia or severe bradycardia, the fetus in potential distress is recognized, and further evaluation with fetal scalp pH can be carried out. Non-reassuring FHR patterns are only predictable for the five minute Apgar score being < 7 in 20% of cases; therefore, fetal pH sampling is necessary to prevent unnecessary cesarean sections.⁶

Normal fetal scalp pH values are 7.25 - 7.35. If adequate fetal blood is obtained, the pO₂ (normal

18-22 mm of Hg), pCO₂ (40-50 mm of Hg) and base deficit (normal 0-10 meq/l) may also be determined. This additional information helps define the fetal acidosis as respiratory (cord occlusion) or metabolic (chronic placental insufficiency). Numerous studies have shown excellent correlation of the fetal scalp pH with fetal heart rate patterns and Apgar scores.⁷ Fetal scalp pH sampling requires special, expensive equipment, repeated sampling throughout labor, is technically difficult, and has both false positives and false negatives. Therefore, it is unlikely for the present that fetal scalp pH determinations will be done except in tertiary centers. In most clinical settings, if there are repetitive severe variable decelerations, late decelerations of any magnitude, loss of beat to beat variability with or without tachycardia, the maternal position should be changed to relieve aorta caval compression and remove pressure from the umbilical cord. Any maternal hypotension should be corrected; if oxytocin is being used, stop the induction and give oxygen at 6 l/minute. If these measures fail to correct the non-reassuring FHR patterns, and no facilities for pH determination are available, cesarean section should be performed.

Perhaps, one additional benefit from intrapartum FHR monitoring has been the realization that oxytocin is a frequent cause of fetal distress. This drug should only be given with constant infusion pump and uterine activity must be recorded to determine the uterine response.⁸

The question of which patient should be monitored during labor is difficult to answer. Certainly all high risk patients should be monitored. If there is monitoring equipment available, all patients should be monitored, as even the purportedly normal fetus from a "normal pregnancy" will occasionally show evidence of fetal distress.

Antepartum Fetal Monitoring

The oxytocin challenge test (OCT) has been used extensively for fetal assessment in high risk pregnancies. The physiological basis for this test is that during uterine contractions, utero placental blood flow slows or ceases. It follows that such periodic interruption of placental perfusion subjects the fetus to repetitive hypoxic stress. The fetal response to hypoxic stress is abnormal FHR pattern, primarily late decelerations, and loss of heart rate variability. In general, the OCT must be repeated on a weekly basis, and is considered positive if 50% of the contractions have late decelerations. The OCT is performed in the labor unit with the patient in semi-Fowler or lateral tilt, blood pressure is recorded every 10 minutes, oxytocin is started at 0.5 milli-units/minute, and thereafter, doubled every 15

minutes until three contractions occur in 10 minutes. A negative test is one with no decelerations, normal base-line FHR, normal FHR variability, and accelerations of FHR with fetal movement. The correlation of a negative OCT with fetal outcome has been excellent; however, the test is difficult to interpret and requires critical judgement in terms of estriol values, fetal maturity studies, and clinical condition of the mother. The test has been indicated during late pregnancy for patients with diabetes, chronic hypertension, prolonged pregnancy, intrauterine growth retardation, cyanotic heart disease, Rhesus sensitization, elderly gravida (>40) and patients with toxemia.⁹

The OCT is contraindicated in patients with previous premature labor, hydramnios, previous classical cesarean section, and placenta previa.

Telemetry Monitoring Consultations in South Dakota

Many hospitals in South Dakota are now acquiring fetal monitoring equipment. To assist physicians in obtaining consultation, a rapid, inexpensive telemetry system for 24 hours a day consultation has been made available through Sacred Heart Hospital and the Ob/Gyn Residency Program. Fetal monitor-

ing tracings may be sent by Xerox telecopier to Labor and Delivery at Sacred Heart Hospital, and consultation obtained regarding pattern interpretation.

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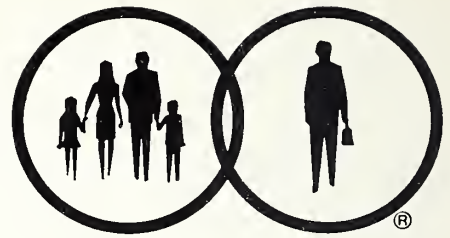
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Recordkeeper—continuing medical education credits.
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TUBERCULOSIS IN THE DAKOTA SIOUX

Approximately 20 percent of the hospital patients in Wessington Springs, South Dakota, are native Americans of the Yankton and Yanktonais tribes. The other 80 percent are Middle West caucasians.

One percent of the white patients have positive mantoux. Twenty-nine percent of the Indian patients have positive Tbc skin tests. According to our findings the Mantoux test turns positive at about the age of twenty-five in Indian people. It has been postulated that this may be due to an inadequate number of sensitized T lymphocytes.

The autopsy findings in a child who died of milary Tbc are presented. She had a negative skin test and most children have negative mantoux. The case of a little Indian girl who has tuberculosis is recorded and x-rays of her brother and cousin are pictured. Their grandfather died in 1976 from tuberculosis and diabetes.

Apparently Tbc is a very significant cause of acute and chronic pulmonary disease in Indian children but rarely does it take one's life. Death in the past, from what was thought to be tuberculosis, was probably due to secondary invaders. Antibiotics now protect the children from bacterial pneumonia.

Tuberculosis is a major health problem among the Dakota Indians. The following case histories of two Indian infants illustrate this serious disease.

Case No. 1

M. W. a two year old Indian girl has been diagnosed as having pulmonary tuberculosis and probable disseminated tuberculosis. She is a very friendly little girl who has a vocabulary of many single words (Fig. 1). She has been slow in motor development; however, repeated studies have ruled out any congenital etiology.



Figure 1



Figure 2

The child whose initials are M. W. has been hospitalized 11 times during her first two years of life for treatment of what was diagnosed roentgenologically as bronchopneumonia. Both of M. W.'s parents are being treated with prophylactic Isoniazid and her grandfather, with whom she has lived much of her life, died in 1976 of active tuberculosis. For these reasons, M. W. has been given Mantoux tests on several occasions. She showed a 1.5 cm induration at the age of 14 months (Fig. 2). M. W. has been evaluated by pediatrician Harry Farrell, M.D. of Sioux Falls and at the University of Minnesota. Nuclear bone scans revealed no infiltration and repeated gastric washings were negative for acid-fast bacilli. X-ray analysis of the chest showed extensive bilateral perihilar infiltrate with extension into the peripheral lungs. Additional Mantoux tests over the last year have all given positive results.

*Junior Medical Student, USD School of Medicine.

**Family Practitioner, Wessington Springs, S.D.

In April 1977 M. W. was shown to have a 3 cm positive Mantoux. She continues to have remittant bronchopneumonia and nocturnal fever of 102°F. She is being treated with Isoniazid 75 mgm qid and Myambutal 200 mgm daily.

Case No. 2

Patient M. C. (Sioux Valley Hospital number 421061), a 2½ year old Indian girl was admitted to Wessington Springs Hospital 11-13-66 with the preliminary diagnosis of bilateral pneumonites and early bronchopneumonia (Her mantoux was negative). Chest x-rays reported "Lung marking accentuated about the hilla and both bases medically; perihilar infiltration on both sides, the peripheral lung fields negative". Ten days later, she became rigid and spastic. She was transferred to the care of Harry Farrell, M.D. pediatrician in Sioux Falls, South Dakota. She died 11-26-66 at Sioux Valley Hospital where an autopsy revealed within the upper lobe of the right lung a 2 cm. cavity filled with yellow white caseous material. Numerous enlarged firm lymph nodes were present at the hilar of the lungs and with the mesentery. Transection of the hilar nodes revealed areas of caseation. Acid fast organisms were present within the lung tissue throughout the spleen and liver similar yellow white nodules were noted. Final anatomical diagnosis was miliary tuberculosis, pulmonary congestion and edema and bronchopneumonia.

Literature searches show there have been no statistical studies done on the incidence of tuberculosis in the Dakota Indian.

Wessington Springs Hospital is a small community hospital with an area outreach of roughly 45 miles in diameter. Approximately 20 percent of the patients are Dakota Sioux. During the past 12 months each new admission at the Wessington Springs hospital has received an intra-cutaneous Mantoux (PPD). Reactions measuring 15 mm or more in induration were defined as positive, indicating sensitivity from active or healed tuberculosis infection. Results are shown in Table 1.

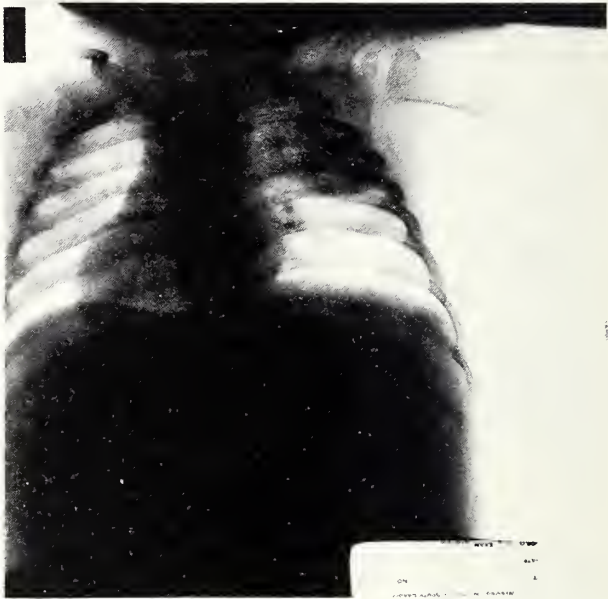
TABLE 1. MANTOUX RESULTS OF INDIAN AND WHITE PATIENTS ADMITTED TO WESSINGTON SPRINGS HOSPITAL MAY 1, 1976 through APRIL 30, 1977

INDIAN PATIENTS				
AGE	TOTAL	NEGATIVE	POSITIVE	% POSITIVE
0 - 6	35	34	1	2.7%
7 - 13	14	13	1	7.1%
14 - 25	16	14	2	1.3%
26 - 50	32	8	24	75.0%
51 -				
& over	31	22	9	29.0%
	<hr/>	<hr/>	<hr/>	<hr/>
Total	128	91	37	28.9%
WHITE PATIENTS				
AGE	TOTAL	NEGATIVE	POSITIVE	% POSITIVE
0 - 6	84	84	0	0%
7 - 13	40	40	0	0%
14 - 25	93	92	1	1.1%
26 - 50	53	53	0	0%
51 -				
& over	209	206	3	1.4%
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Total	479	475	4	.8%

Of the 900 new admissions during this time period, 607 (67.4%) received the Mantoux. Twenty-seven

percent of those receiving the Mantoux were Dakotas. One percent of the white patients proved positive. (The white patient who was positive in the 14-25 age group is married to an Indian gentleman. Twenty-nine percent of the Indian patients had a positive Mantoux with the majority of these occurring in the 26-50 age groups.

Each year Wessington Springs hospital treats over 80 cases of X-ray proven bronchopneumonia in Indian children. (See X-rays)



M. W.



M. C.

The case history of M. W. along with the autopsy results in patient (#421061 Sioux Valley), indicates that bronchopneumonia in Indian children may be pulmonary tuberculosis.

Apparently the high death rate from tuberculosis in years past was due to secondary pyogenic invaders. Now with prompt antibiotic treatment most of the Indian children recover from the primary infection.

"Upon gaining entrance to the body, tubercle bacilli stimulate the T(cellular) lymphocytes to liberate several substances which prompt phagocytosis and lysis of mycobacteria. Recent literature states the Mantoux skin test is a biological test which is dependent upon the presence of an adequate number of these circulating sensitized T lymphocytes.(1)

"The American Indian was spared tuberculosis infection until extensive contact began with members of the white race in which chronic TB was common. Therefore these people have less ability to develop sensitized T lymphocytes in response to the tuberculosis infection and in them the infection tends to be more rapidly progressive".¹

"The intracutaneous mantoux is regarded by many as the definitive test for tuberculous infection".² Past experience in the Wessington Springs hospital indicates most Dakota Indian children get their exposure to TB in infancy and early childhood. Their delayed ability to develop sensitized T lymphocytes in response to the tuberculosis infection would explain why a positive Mantoux is not seen until their late twenties.

- (1) American Thoracic Society Committee on Diagnostic Skin Testing: The Tuberculin Test. New York, American Lung Association, revised 1974.
- (2) Principles of Internal Medicine. Harrison, Tinsley Randolph, McGraw Hill, Copyright 1977 Edition, p. 901.

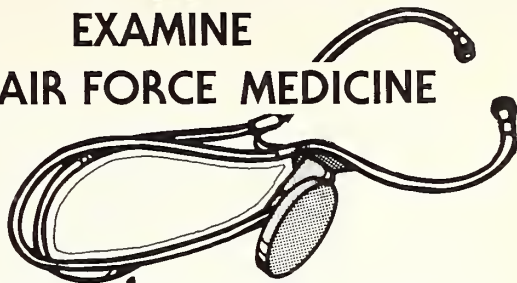


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THE ALUMNI ASSOCIATION

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has been established by the South Dakota Medical School Endowment Association. Among other activities, the Alumni Association serves as a source of information for graduates and assists in the organization of class reunions.

As of 1977 the South Dakota School of Medicine is a four-year degree granting school, and through the Alumni Association the school, and past and present students will be better served.

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PATIENT PACKAGE INSERTS: A CONCEPT WHOSE TIME HAS COME?

The consumer's right to know is an irreversible and desirable trend of the Seventies. It extends, and properly, to a patient's right to know more about his or her prescription medications. One way, gaining favor, is through patient package inserts. Wisely-prepared and properly distributed when medically indicated, they could markedly improve patient knowledge and drug therapy—laudable goals by anyone's standards.

The PMA endorses these goals and will work with government, the health professions and consumers to achieve them.

The Advantages

The concept holds promise of benefits: better patient understanding of the product prescribed, better adherence to the treatment plan, and more awareness of possible side reactions.

Every doctor has had patients who fail to finish antibiotic regimens because they feel better. Some patients assume that if one tranquilizer or analgesic is good, two may be twice as good. Still others fail to report dizziness while on antihypertensive therapy—and so on.

Problems like these might arise less often if the patient received written information in addition to verbal instructions. Some studies suggest that patients are more receptive to such materials, and they more often understand the verbal instructions and follow them, when inserts are used.

The Disadvantages

There are also some potential problems. Obviously, the inserts must be clearly phrased, without extraneous or complex detail. How much information

is enough? How can it be kept current? Should all patients receive the same information? Should inserts be included with all drugs? Should only potential problems be listed or are patients better off with a "fair balance" presentation that describes usefulness as well as drawbacks?

These and similar questions require answers, since model inserts have yet to be properly developed and tested. Despite the need for these studies, the FDA is proceeding prematurely with inserts on selected products. We think the Congress is the only place where the matter can be given the proper legal status and direction, particularly since it represents a conceptual change in the legal, medical and social framework of the nation's prescription drug information system.

The Solution

The PMA believes that carefully-devised pilot studies of various kinds of inserts are needed. They should be developed and implemented with full participation by doctors, pharmacists, consumers, communications experts and the drug industry. Such studies will provide reliable pathways to follow, so that inserts will be useful aids to medical practice.

And particularly we think that you should be closely involved in this debate and in these studies and decisions. Otherwise, people with less experience and qualifications may control the purposes, content and use of a tool with considerable promise for improved patient care. It could make a difference in your practice tomorrow, and more importantly, in the health of your patients.

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Discharge summaries, organizational distress—
From all depart.

III

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IV

Peoples' lives turn into boxes of paper
Burn it now while still you're able
To hide the lie, to complete the farce
Of a noble life, a devoted family, the happy wife.
Leave not the mute instruments of success
The hidden thought, the occult failure
Cast in print on pulpy sheets to
Be devoured and digested by all it meets.

V

Peoples' lives are turned into paper
Take them along to burn with you
Or burn them now and laugh in heaven
As those below, in confusion driven
To sort your life, to divide the spoil
Before they set you in the soil.
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The refuse of living,
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You lived for life, for love, not for impression.

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INDICATIONS For the relief of moderate to moderately severe pain.

CONTRAINDICATIONS Hypersensitivity to oxycodone, aspirin, phenacetin or caffeine.

WARNINGS Drug Dependence Oxycodone can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence and tolerance may develop upon repeated administration of PERCODAN®, and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral narcotic-containing medications. Like other narcotic-containing medications, PERCODAN® is subject to the Federal Controlled Substances Act.

Usage in ambulatory patients Oxycodone may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using PERCODAN® should be cautioned accordingly.

Interaction with other central nervous system depressants Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics or other CNS depressants (including alcohol) concomitantly with PERCODAN® may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

Usage in pregnancy Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, PERCODAN® should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

Usage in children PERCODAN® should not be administered to children.

Salicylates should be used with caution in the presence of peptic ulcer or coagulation abnormalities.

PRECAUTIONS Head injury and increased intracranial pressure The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute abdominal conditions The administration of PERCODAN® or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

Special risk patients PERCODAN® should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

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ADVERSE REACTIONS The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients, and some of these adverse reactions may be alleviated if the patient lies down.

Other adverse reactions include euphoria, dysphoria, constipation and pruritus.

DOSAGE AND ADMINISTRATION Dosage should be adjusted according to the severity of the pain and the response of the patient. The usual adult dose is one tablet every 6 hours as needed for pain.

DRUG INTERACTIONS The CNS depressant effects of PERCODAN® may be additive with that of other CNS depressants. See WARNINGS.

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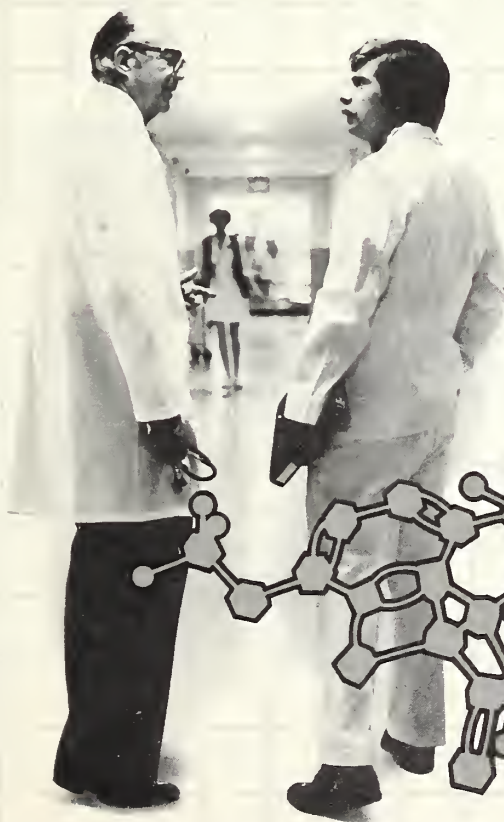
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Loren H. Amundson, M.D., Sioux Falls, has been appointed to the Committee on Continuing Medical Education of the American Academy of Family Physicians.

* * * *

Rodney Parry, M.D., and **Lowell Hyland, M.D.**, both of Sioux Falls, have been named members of the Board of the South Dakota Lung Association.

* * * *

R. F. Thompson, M.D., Clinical Professor of Medicine, USD School of Medicine, attended the San Diego, California meetings of the American Society of Hematology.

* * * *

The Huron Clinic has announced the association of **Ravi Kapur, M.D.**, in the practice of ophthalmology. Dr. Kapur is a graduate of S.M.S. Medical College, India. He took his ophthalmology residency at Brooklyn Eye & Ear Hospital, and Downstate Medical Center in New York City. He also completed one year of residency training in neurology at the Veterans Administration Hospital, East Orange, New Jersey, before coming to Huron.

* * * *

Recent lectures at the Veterans Administration Hospital, Fort Meade, included "Psychiatric Consultation" by **T. H. Bhatti, M.D.**, and "Theoretical Aspects of Depression and Manic Depressive Illness" by **Carl Rutt, M.D.**, both faculty members of the USD School of Medicine.

New officers for the Aberdeen District Medical Society include **S. B. Altman, M.D.**, president; **John McFee, M.D.**, vice president; and **Thomas Bunker, M.D.**, secretary-treasurer.

* * * *

Guest speaker for the Fourth Annual Perinatal Conference held in Sioux City, Iowa, included **Loren Petersen, M.D.**, Chairman of the Department of Ob-Gyn, USD School of Medicine.

* * * *

Bill Church, M.D., was recently elected president of the Sioux Fall District Medical Society. Other officers include **Lowell Hyland, M.D.**, vice president; **John Ochsner, M.D.**, secretary; and **Ronald Wyatt, M.D.**, treasurer.

1978 officers for the Watertown District Medical Society are president, **Robert Meyer, M.D.**; vice president, **B. J. DeSai, M.D.**; and secretary-treasurer, **G. E. Tracy, M.D.**

* * * *

The South Dakota Human Service Center, Yankton, recently announced the appointment of **David Bean, M.D.**, as superintendent. Dr. Bean is also serving as chairman of the USD School of Medicine's Psychiatry Department and medical director of the Board of Charities and Corrections. Dr. Bean is a graduate of the University of Minnesota School of Medicine and took his psychiatric residency training at the Mental Health Institute, Cherokee, Iowa. Previously he has been associated with the psychiatry departments at Creighton University Medical School and the University of Nebraska School of Medicine.

* * * *

K. Stephen Kazi, M.D. has established his practice in orthopedic surgery at Dakota Midland Hospital, Aberdeen. Dr. Kazi graduated from medical school in Pakistan, completed his internship and general surgery residency at The Staten Island Hospital, New York, and his orthopedic surgery training at New York University Medical Center, New York. Prior to coming to South Dakota Dr. Kazi worked as an orthopedic consultant at Gouverneur Hospital in New York City.

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**Current Progress in Obstetrics and Gynecology
Lecture #3—Ultrasound in Obstetrics and
Gynecology With Special Reference to
Amniocentesis**

Shailaja Didolkar, M.D.

**Clinicopathological Conference
Fourteen Year Old Girl With Hirsutism
of One Year's Duration**

James Oakland, M.D.

S. G. Lee, M.D.

John F. Barlow, M.D.

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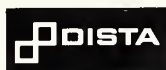
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Future Meetings

April

Third Annual National Conference on Child Abuse and Neglect, Statler Hilton Hotel, New York, NY, April 16-19. Fee: \$50. Contact: 1978 Nat'l Conference, P. O. Box 9, Piscataway, NJ 08854.

24th Annual Meeting of the Western Gerontological Society, Tucson, AZ, April 9-12. Contact: Western Gerontological Society, 785 Market St., Suite 1114, San Francisco, CA 94103.

May

South Dakota Chapter, American College of Surgeons, Downtown Holiday Inn, Sioux Falls, SD, May 6. Contact: W. J. Mattson, M.D., Sec-Treas, P. O. Box 2623, 725 Meade St., Rapid City, SD 57709.

Eighth Annual Hospital Medical Staff Conference and Hospital Trustee Forum, Sun Valley, ID, May 21-25. 30 hrs. Category I AMA credits. Contact: Estes Park Institute, P. O. Box 400, Englewood, CO 80151.

June

13th Annual Meeting of the Rocky Mountain Neurosurgical Society, Broadmoor Hotel, Colorado Springs, CO, June 11-14. Contact: Ralph J. Kaplan M.D., Sec., Neurosurgery Section, P. O. Box 25606, Oklahoma City, OK 73125.

The First World Medical Games, Cannes, France, June 11-18. Contact: Le Quotidien Du Medecin, 7, Avenue de la Republique, 75011 Paris, France.

24th Annual Family Practice Review, Estes Park, CO, June 12-17. Contact: Off. of Postgrad. Med. Ed., U. of Colo. School of Medicine, 4200 E. 9th Ave., Cont. C295, Denver, CO 80262.

Advances in the Management of Long Term Diseases of Children, Black Hills Seminar, Rapid City Regional Nursing School, Rapid City, SD, June 21-23. Contact: Off. of CME, 800 E. 21st St., Sioux Falls, SD 57105.

Ninth Annual Summer Program in Human Sexuality, Indiana U., Bloomington, IN, June 21-28. Fee: \$325. Contact: Institute for Sex Research-Summer Program, 416 Morrison Hall, Ind. U., Bloomington, IN 47401.

Orthopedics and Physical Fitness for Family Physicians, Aspen, CO, June 24-28. Contact: Off. of Postgrad. Med. Ed., U. of Colo. School of Medicine, 4200 E. 9th Ave., Cont. C295, Denver, CO 80262.

Seventh Annual Mid-America Hospital Medical Staff Conference and Hospital Trustee Forum, Oconomowoc, WI, June 25-29. 30 hrs. Category I AMA credits. Contact: Estes Park Institute, P. O. Box 400, Englewood, CO 80151.

American Cancer Society-National Cancer Institute National Conference on Nutrition in Cancer, Washington Plaza Hotel, Seattle, WA, June 29-July 1. AMA & AAFP credits. Contact: Sidney L. Arje, M.D., Am. Cancer Soc-Nat'l Cancer Inst. Nat'l Conf. on Nutrition in Cancer, 777 3rd Ave., New York, NY 10017.

July

Thirteenth World Congress on Diseases of the Chest, Kyoto International Conference Hall, Kyoto, Japan, July 2-7. Fee: AACP Members—\$110. Non-members—\$130. Contact: Alfred Soffer, M.D., Ex. Dir., ACCP, 911 Busse Highway, Park Ridge, IL 60068.

Current Progress in Obstetrics and Gynecology

A Series of 12 Lectures

Lecture #3

ULTRASOUND IN OBSTETRICS AND GYNECOLOGY WITH SPECIAL REFERENCE TO AMNIOCENTESIS

by

Shailaja M. Didolkar, M.D., F.A.C.O.G.*

Obstetrics is one of the first clinical specialties where ultrasound was accepted and developed rapidly. It is an excellent noninvasive, safe, and speedy diagnostic tool. This article is written in order to assist a practicing obstetrician and family physician in understanding ultrasound and its various uses without undue emphasis on physics and technique. The procedure and technique for avoiding complications of second and third trimester amniocentesis under ultrasound is described.

Significant work on ultrasound started in 1952; however, it was not until the late 1950's and the first half of the 1960's that the real potential of ultrasonic diagnosis began to be appreciated. Pioneers for design of equipment and some of the diagnostic potentials in obstetrics were Ian Donald of Glasgow, England, and Joseph Holmes of Denver. The years 1967 to 1969 were the era of the development of ultrasound in OB-GYN. From 1968 to 1970 was the era of M-mode (echocardiography); and the era of real time ultrasound began in 1973. Referring to the latter, real events are visualized as they occur, i.e. fetal movements in utero. It is fascinating to watch fetal movements in utero as early as 8-9 weeks of gestation. Parents and physicians experience tremendous joy watching movements like thumb-sucking in utero. The latest development is the measurement of fetal umbilical vein blood flow at various gestational ages. This will have tremendous implications for the management of high-risk fetuses.

Ultrasound is a high frequency (more than 20,000 cycles per second) sound which is inaudible to

the human ear. Most of the diagnostic ultrasound has frequencies between 1 to 20 MHz. The transducer is the most important part of a machine which functions as sender as well as receiver of reflected sound waves. The ways in which these returning signals are displayed on an oscilloscope make various modes such as A-mode (unidimensional), B-mode (two dimensional or cross sectional), and M-mode (time-motion display). These are examples of pulsed (intermittent) echo technique. Some machines use continuous echoes, e.g. doppler, which is used to detect fetal heart rate and blood flow in vessels.

Grayscale is related to echo amplitude, and is displayed as various shades of gray. Real time ultrasound is produced by successively stimulating the multicrystal transducer to produce 30 or 40 frames per second. This gives a motion picture-like effect. Cross sectional abdominal images (B-mode) revealed by these two modalities are extremely valuable tools in obstetrics.

Any diagnostic modality used in obstetrics should fulfill the criteria of safety for mother as well as fetus. Ultrasound has been used for almost 20 years, and with no side effects noticed to date. This has been verified by epidemiologic studies. Pulsed echoes are very short in duration (microseconds), and there is a long interval between pulses, in that 99.9% of the time, the machine is gathering the information, rather than insonating the tissues. Similarly, experimental animal studies and chromosomal studies are unable to show any harmful effects. Diagnostic ultrasound used in obstetrics has a frequency from 2 to 5 MHz. At these frequencies, sound intensities are ten times below safety margins.

* Assistant Professor of OB-GYN and Medical Director of High Risk Obstetrics, South Dakota Perinatal Project, 1100 South Euclid Avenue, Sioux Falls, SD 57105.

USES IN OBSTETRICS:

I. **First Half of Pregnancy:** Ultrasound is one of the quickest and earliest diagnostic tests of pregnancy. Most of the early complications of pregnancy could be diagnosed.

- a) Diagnosis of pregnancy could be made as early as five weeks. Pregnancy is seen as gestational sac (Fig. 1).



Figure 1

Gestational Sac. Pregnancy at 5 weeks gestation.

- b) Gestational age is estimated by Crown Rump Length (CRL) or volume of gestational sac or Biparietal Diameter (BPD).
c) Diagnosis, prognosis, and follow-up of threatened and habitual abortion is done according to the position, shape, and growth of gestational sac.
d) Diagnosis of missed abortion or intrauterine fetal death is simple, especially with real time ultrasound as no fetal heart beats are visualized (Fig. 2).

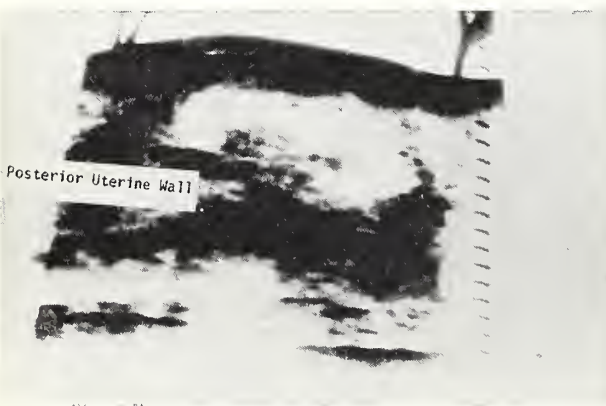


Figure 2

Missed Abortion. Enlarged uterus showing coarse undefined echoes on posterior uterine wall.

- e) Ectopic pregnancy is diagnosed with clinical history and no evidence of intrauterine pregnancy (Fig. 3). On rare occasions, extra-uterine gestational sac is seen.

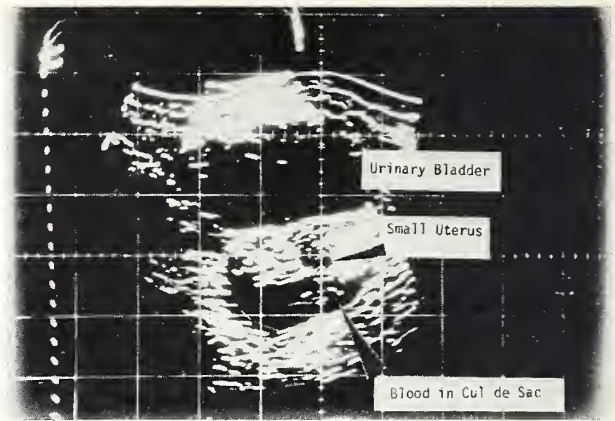


Figure 3

Ectopic Pregnancy. Shows blood in the cul-de-sac. Uterus small. No evidence of intrauterine pregnancy.

- f) Hydatidiform mole is diagnosed with almost 100% accuracy (Fig. 4). In advanced cases, enlarged lutein cysts are also identified.

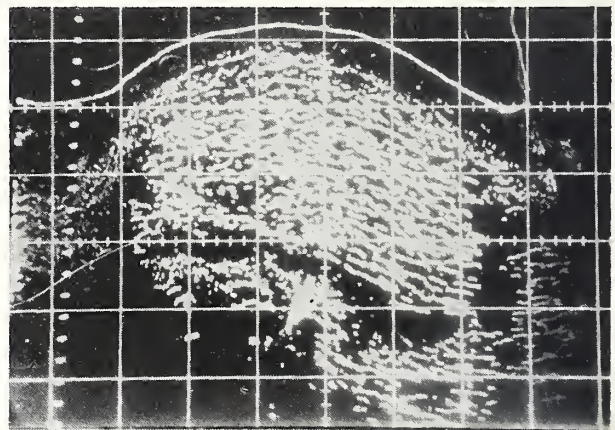


Figure 4

Hydatidiform Mole. Enlarged uterus filled with multiple echoes giving 'snowflake' appearance.

- g) Multiple gestation is seen as multiple sacs or fetuses.
h) Pregnancy with fibroid or ovarian cyst is well differentiated by an ultrasound.

II. Second Half of Pregnancy:

- a) Gestational age is estimated by BPD measurements. For accurate estimation of EDC, measurement earlier than 30 weeks is crucial. After 30 weeks, two factors will give false results such as slow rate of fetal head growth and growth retardation.
b) Detection of congenital anomalies such as anencephaly, spina bifida, hydrocephaly, microcephaly, hypophosphatasemia, phocomelia, thanatophoric dwarf, renal agenesis, and polycystic kidneys are possible (Figs. 5, 6 & 7).

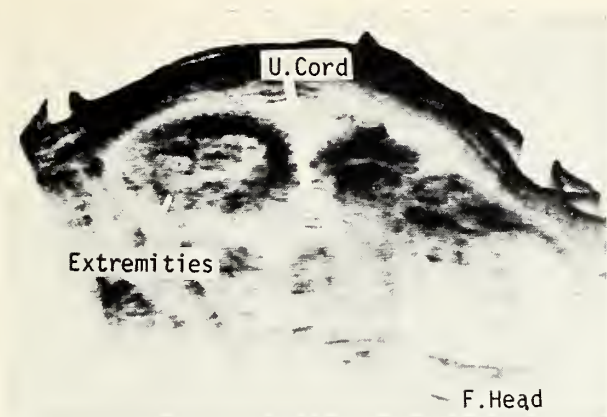


Figure 5

Normal Fetal Anatomy. Showing various fetal parts. Umbilical cord and posterior placenta.

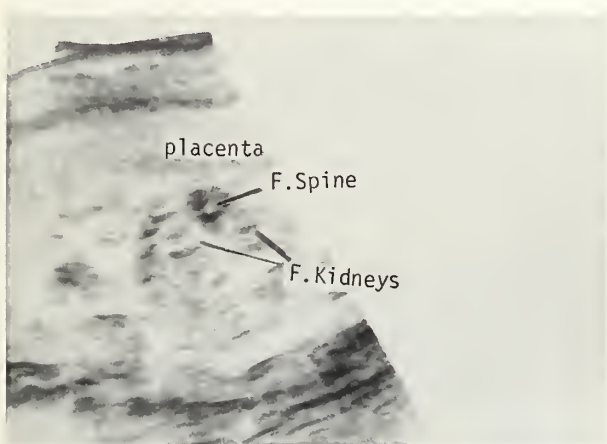


Figure 6

Normal Fetal Anatomy.

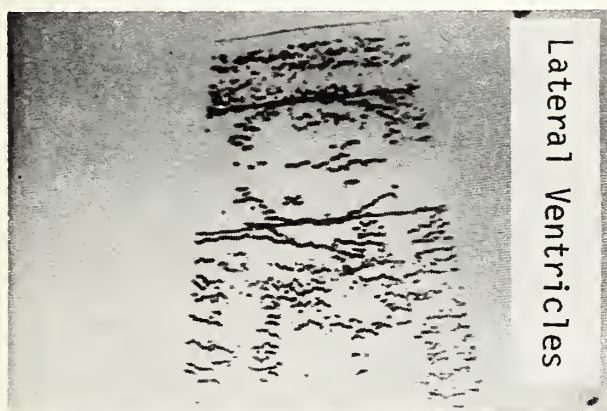


Figure 7

Fetal Head. Two parallel lines to central midline echo represent lateral ventricles. Biparietal Diameter (BPD). BPD measurements give gestational age. Midline echo represents falx cerebrii.

- c) Placenta is localized with 100% accuracy. Placental volume, maturity, defects, and tumors are diagnosable (Fig. 8).

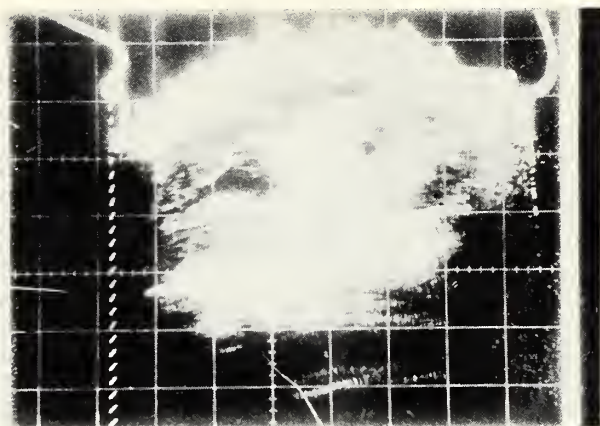


Figure 8

Total Placenta Previa. Longitudinal gray scale scan. Dotted line is a symphysial end. Placenta is seen as multiple small echoes with distinct chorionic plate in lower uterine segment both anterior and posterior uterine wall. Indicating total placenta previa.

- d) Amniocentesis for various reasons is done under ultrasound.
- e) Fetal growth rate is estimated by: i) Serial BPD, ii) BPD/abdominal circumference ratio, and iii) BPD/thorax ratio (Fig. 9).

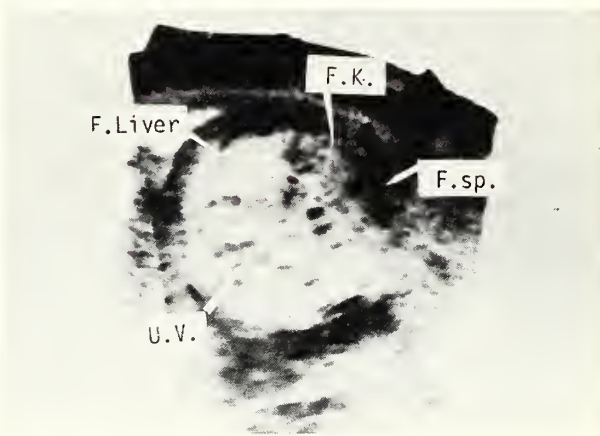


Figure 9

Showing cross sectional view of fetal abdomen. Umbilical vein (U.V.) is the reference point used for measurement of fetal abdominal circumference. F.K. is fetal kidney. F. SP. is fetal spine.

- f. Diagnosis of small for gestational age (SGA) is done by estimation of fetal growth rate, total intrauterine volume (TIUV), placental volume, and hourly fetal urine output.
- g. Diagnosis of fetal presentation and position is done without necessitating radiation to mother or fetus.

III. Doppler is used for detection of fetal heart rate and its monitoring during the labor and delivery.

IV. Uses in Gynecology:

- a) Localization of I.U.C.D. (Fig. 10).
- b) Uterine anomalies, fibroids
- c) Tubo ovarian masses, pelvic inflammatory disease
- d) Ovarian tumors, cystic, solid, semisolid
- e) Follow-up of intra-abdominal malignant tumor, pre and post therapy.

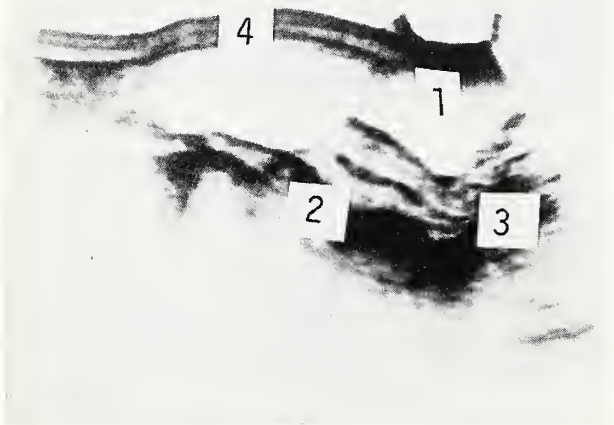


Figure 10

Showing longitudinal scan at 2 cm. to the left of midline.

- 1) Urinary bladder
- 2) Uterine body with strong midline echo—indicating intrauterine contraceptive device (I.U.C.D.)
- 3) Cervical canal and vagina
- 4) Simple clear ovarian cyst. Pathology report of the cyst was simple serous cyst of the left ovary.

AMNIOCENTESIS:

Amniocentesis is an invasive procedure, and many serious complications have been reported, thus it should not be taken lightly. Its complications are minimized by the use of ultrasound examination during the procedure. Amniocentesis is commonly done in the second or third trimester. It can be done as early as 14 weeks of gestation.

Indications:

- 1) Midtrimester amniocentesis for genetic reasons
- 2) In isoimmunized pregnancies to know severity of fetal disease
- 3) Detection of fetal maturity
- 4) To detect fetal distress seen as meconium stained amniotic fluid
- 5) Fetal endocrine disorders:
 - a) Congenital adrenal hyperplasia
 - b) Sulphatase deficiency
- 6) Polyhydramnios for therapeutic reason
- 7) Prior to amniograms or intrauterine transfusions
- 8) In the future may be therapeutic reasons

Method:

The primary purpose of ultrasonic examination prior to amniocentesis is to find the most suitable site for needle puncture. Localization of the placenta, fetal body, fetal head, and fetal position is very important. Amniotic fluid pocket, free of placenta and fetal parts, needs to be localized by scanning in both transverse and longitudinal directions (Fig. 11). When the placenta is posterior, the procedure is easy. Aspiration biopsy transducers are of greater advantage as the procedure is done during continuous scanning and needle tip is visualized. Usually the fetus moves away with the needle touch. After localizing the area, the marker is put on the screen. This not only shows the direction and angle of the needle, but also gives the depth to which the needle should be inserted. The same area needs to be marked on the abdomen. It is crucial to avoid extreme lateral areas, especially in the midtrimester, to avoid large uterine vessel. Similarly, urinary bladder should be avoided. When anterior placenta covers the whole anterior surface of the uterus, it is advisable to use peripheral edge or thinnest area of the placenta.

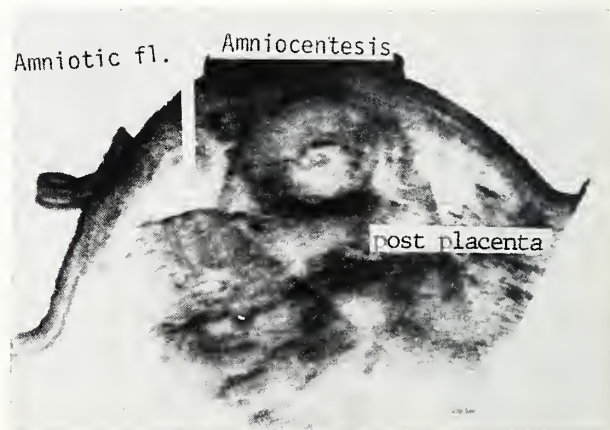


Figure 11

Showing a transverse scan in a near term pregnancy. Under the anterior abdominal wall in the center is a fetal body. The clear spaces on either side are pockets of amniotic fluid. The arrow indicates the area where amniocentesis could be done safely.

After localizing the area, scrupulous antiseptic precautions are taken. Local anesthetic may or may not be used. Disposable No. 20 to 22, (9 cm.) spinal needle is used. Obese patients need a longer (13 cm.) needle. The needle is inserted according to the direction and the angle shown by the marker. As the needle is passing through the different layers, each layer should be recognized. As soon as it enters the amniotic cavity, it gives a feeling of popping a balloon. Usually, one cm. more depth is needed than is indicated by the marker. After fluid is aspirated in syringe (20 to 22 cc.), the syringe

should be removed separately in order to avoid blood entering it while being withdrawn. Similarly, the stylet should be inserted before removing the needle in order to prevent feto-maternal bleeds and endometriosis.

COMPLICATIONS AND ITS PREVENTION:

Midtrimester Amniocentesis:

Although midtrimester amniocentesis can be done as early as 14 weeks, the procedure is difficult because of the small amount of fluid, and thick uterine wall. At 14 weeks, one cc. of fetal blood loss accounts for 15% of the fetal blood volume, while at 16 weeks, it is only 6%. Hence, midtrimester amniocentesis is preferable at 16 weeks.

Recent collaborative studies evaluated more than 1000 mid-trimester amniocenteses, and concluded that risk of spontaneous abortions and stillbirths is no greater than control population.

Fetal, placenta, and cord injuries are dangerous. Serious fetal injuries, i.e. eye injury and spinal cord injuries have been reported. Needle puncture sites or permanent scars are found on the infant. The placenta is located anteriorly in 40% of the cases, but with the help of ultrasound, it is possible to locate a pocket of amniotic fluid, free of placenta and fetal parts, more than half of the time. If not, a very thin peripheral edge of placenta could be selected. Cord insertion is localized often with gray scale and real time ultrasound (Fig. 12).

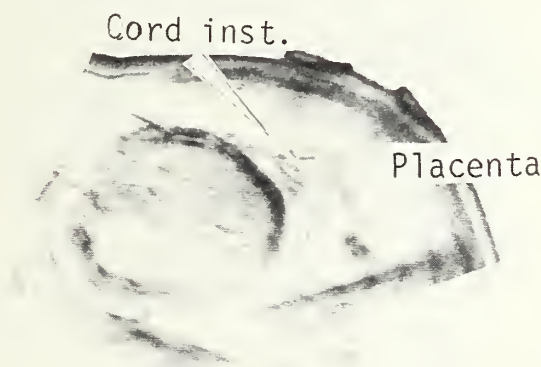


Figure 12

This is a transverse scan. Just underneath the anterior abdominal wall is placenta and a circular fetal body towards the left. Beautifully seen is a cord insertion and umbilical cord.

Feto-maternal hemorrhages are minimal under ultrasound. In Rh negative patients, Kleihauer-Betke staining of maternal blood for fetal RBC identification should be done, and accordingly, Rhogam should be given, especially after bloody taps.

Leaking of amniotic fluid following the procedure is reported. It usually stops within a few days. Ma-

ternal uterine or intraabdominal vessel injury, leading to severe intraperitoneal bleeding, has been reported. Hence, it is prudent to avoid extreme lateral walls, especially in midtrimester amniocentesis.

Third Trimester Amniocentesis:

Pre and post amniocentesis fetal heart rate should be counted. With bloody tap, it is essential to find if it is fetal blood. If it is present, fetal cells should be counted. If more than 5% of the fetal cells are seen, then fetal heart rate should be monitored for at least two hours. Sudden, progressive fetal bradycardia or loss of beat to beat variability should indicate significant fetal blood loss, and needs an emergency C-section, if fetus is of viable age.

A majority of the above discussed complications could be avoided with an ultrasound. Previously, only three sites were recommended: (1) over extremities, (2) suprapubic, or (3) nuchal. They are dangerous without ultrasound, especially nuchal, as the cord around the neck is common. It no longer needs to be restricted to the same sites. Thus, ultrasound gives more freedom of technique, choice of site, and a safer procedure.

SUMMARY:

Ultrasound is an extremely valuable diagnostic tool in obstetrics. It is noninvasive, safe, and a speedy diagnostic test. It is useful in the diagnosis of almost all complications of pregnancy. Estimation of gestational age by biparietal diameter (BPD) is commonly used. No other diagnostic modality is nearly as accurate as BPD. BPD measurement has more than 94% accuracy when done earlier than 30 weeks of gestational age. Diagnosis of intrauterine growth retardation can be done with certainty. Various fetal anomalies, especially neural tube defects are diagnosable. Placenta previa, one of the common causes of third trimester bleeding, is diagnosed with 100% accuracy. Whenever the diagnosis of placenta previa is done earlier than 30 weeks, it is mandatory to repeat ultrasound to confirm it at 36 weeks. Due to differential growth of the body of the uterus and lower uterine segment, placenta appears to move, which is called 'migrating placenta'. Amniocentesis under ultrasound is safer and has a minimum of complications. Various gynecological uses are promising. The most important advantage of ultrasound is that it avoids radiation, as x-ray examination was the only other alternative diagnostic modality. This is especially true for a pregnant mother and her fetus.

The bibliography for Ultrasound in Obstetrics and Gynecology with Special Reference to Amniocentesis may be obtained from the Office of SDJM, 608 West Ave., N., Sioux Falls, SD.

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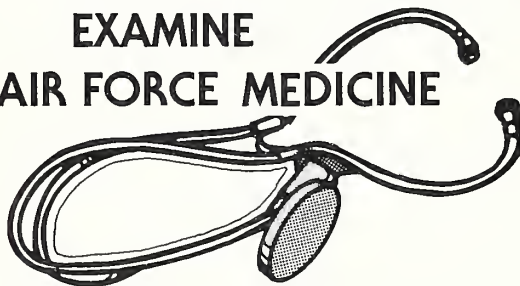
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Usage in children PERCOCET®-5 should not be administered to children.

PRECAUTIONS Head injury and increased intracranial pressure The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute abdominal conditions The administration of PERCOCET®-5 or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

Special risk patients PERCOCET®-5 should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

ADVERSE REACTIONS The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients, and some of these adverse reactions may be alleviated if the patient lies down.

Other adverse reactions include euphoria, dysphoria, constipation, skin rash and pruritus.

DOSAGE AND ADMINISTRATION Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. PERCOCET®-5 is given orally. The usual adult dose is one tablet every 6 hours as needed for pain.

DRUG INTERACTIONS The CNS depressant effects of PERCOCET®-5 may be additive with that of other CNS depressants. See WARNINGS.

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Acetaminophen with the narcotic difference

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The narcotic component in PERCOCET®-5 is oxycodone, which is readily absorbed and provides dependable oral analgesia—usually within 15 to 30 minutes. Oxycodone can produce drug dependence of the morphine type and should be prescribed with the same degree of caution appropriate to the use of other narcotic-containing medications.

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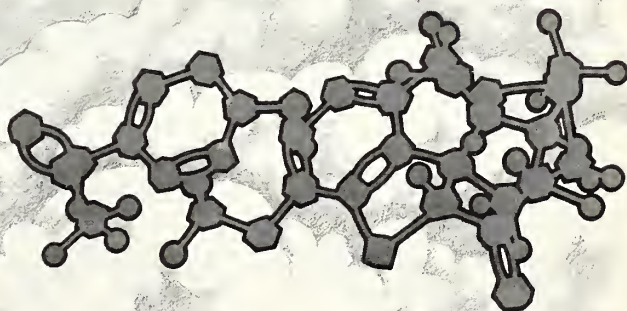
The usual dose of PERCOCET®-5 is one tablet every six hours, providing convenience and economy for your patients. PERCOCET®-5 is ideally suited for your patients with aspirin sensitivity, with hemostatic disturbance, with peptic ulcer or on anticoagulation therapy.

Tablets
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each scored tablet contains 5 mg oxycodone HCl
(WARNING: may be habit forming) and 325 mg
acetaminophen



**When aspirin is
contraindicated.**



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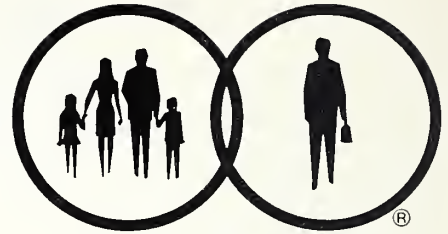
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Please see facing page for Brief Summary of prescribing information.

SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105



FACTS ABOUT THE SPECIALTY OF FAMILY PRACTICE

The specialty of family practice was officially recognized February 8, 1969, when the American Board of Medical Specialties and the Council on Medical Education of the American Medical Association approved a primary certifying board in the specialty. The application for a certifying board was submitted by the then American Academy of General Practice (now the American Academy of Family Physicians) and the Section on General Practice of the AMA.

Family practice is comprehensive medical care with particular emphasis on the family unit, in which the physician's continuing responsibility for health care is not limited by the patient's age or sex nor by a particular organ system or disease entity.

Family Practice is the specialty in breadth which builds upon a core of knowledge derived from other disciplines—drawing most heavily on internal medicine, pediatrics, obstetrics and gynecology, surgery and psychiatry—and which establishes a cohesive unit, combining the behavioral sciences with the traditional biological and clinical sciences. The core of knowledge encompassed by the discipline of family practice prepares the family physician for a unique role in patient management, problem solving, counseling and as a personal physician who coordinates total health care delivery.

The American Board of Family Practice (ABFP) is a free-standing organization whose purpose, as with all other medical specialty boards, is to conduct examinations to measure competence in a special field of medicine (family practice) and to grant certification on the basis of performance in these examinations. Its membership consists solely of its officers and board of directors. Physicians whom it certifies are called diplomates. The structural organization of the new ABFP took shape June 22, 1969, following approval the previous February of a primary certifying board in family practice by the American Board of Medical Specialties.

The American Board of Family Practice conducts examinations and grants certification to family physicians who meet its qualifications and pass the examination. Seven examinations have been held. More than 11,000 diplomates have been certified.

The ABFP also requires recertification by examination every six years, the only certifying board to do so. The first recertification examination was held in the fall of 1976, with some 1,400 diplomates of the 1970 class taking the examination. The ABFP is independent of the Academy. AAFP members do not have to take the board examination to remain Academy members, nor is board certification a requirement for AAFP membership.

Eligibility requirements to take the examination are either (1) to have completed an approved residency in family practice (three-years) or (2) to have been in an active family practice for a minimum of six years and show proof of completion of at least 300 approved credit hours of continuing education study acceptable to the ABFP. After July 1, 1978, only graduates of approved family practice residencies will be eligible to take the certification examination.

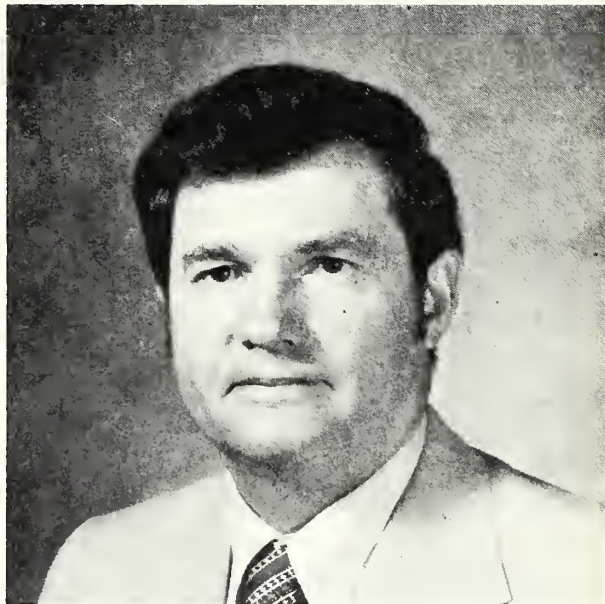
The specialist in family practice is an examination-certified family physician who:

- (1) Serves the public as the physician of first contact and means of entry into health care system;
- (2) Evaluates his patients' total health needs, provides personal medical care within one or more fields of medicine, and refers patients when indicated to appropriate sources of care while preserving the continuity of his own care;
- (3) Assumes responsibility for his patients' comprehensive and continuous health care and acts as a coordinator of his patients' health services, and
- (4) Accepts responsibility for his patients' health care, including the use of consultants, within the context of their environment—the family or comparable social units and the community.

The application for establishment of a certifying board incorporated a set of "Essentials for Residency Training in Family Practice" approved by the AMA's Council on Medical Education and House of Delegates and the Academy's Congress of Delegates. The AMA Residency Review Committee for Family Practice reviews and recommends action on all family practice residency programs. Its actions are then reviewed for approval by the Liaison Committee on Graduate Medical Education, the policy-making body in graduate medical education.

In August 1977, there were more than 5,000 residents in the 325 approved programs. In addition, about 3,400 have been graduated from three-year family practice residencies.

President's Page



Do you follow your own advice, doctor? Do you smoke? Are you overweight? Do you watch your alcohol consumption? All doctors question their patients on these problems but do you follow what you advocate? I am going to take this space to nag your conscience.

When was the last time you took a complete physical exam? You should take care of yourself as well as you do your patients. If you have not had a complete exam in over a year, schedule one this week. Don't keep putting it off.

How is your physical conditioning? Do you have a program going? The best financial investment you can make in the future is your continued good health and ability to keep working. Set aside thirty to sixty minutes a day five days a week for your own health. Basic warm-up exercises are very important. As you grow older stretching all your muscle groups to maintain full range of motion gains more importance as a goal. Next, muscle tone can be improved and unbelievable levels can be returned by a modest and simple weight lifting program taking nine to twelve minutes a day three days a week.

Your cardiovascular and respiratory function can really be improved by jogging or riding a stationary bicycle. Space doesn't permit discussing all the technical points. I have three rules that I follow and they have worked well for me: 1) I never run or exercise to the point that I get chest pain, 2) My pace is such that I never really get short of breath, and I can always carry on a conversation while running, 3) I never allow my heart rate to get above my target rate of 160 per minute. My program has progressed so that I can run several miles non stop. I don't care how far or how fast I run. My target is to work hard enough to keep my heart rate at approximately 140-160 per minute for thirty minutes at least five days each week.

Plan out your own program. Try it and you will like what it does for you.

Faternally,
James Ryan, M.D., President
South Dakota State Medical Association



Have a happy day!

100 mg

250 mg

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The meeting was called to order by Bruce Lushbough, M.D., Chairman. Those present for roll call were Doctors James Ryan, Russell Harris, Duane Reaney, Joseph Hamm, W. R. Taylor, G. E. Tracy, Bruce Lushbough, Winston Odland, Fred Leigh, B. C. Gerber, G. Robert Bartron, R. G. Gere, W. O. Rossing, G. R. Bell, Durward Lang, P. K. Aspaas, Richard Tschetter, Gordon Held, Frank Messner, Eldon Bell, and alternate councilor Charles Monson, and commission chairmen Lawrence Finney, Howard Saylor and Michael Rost. Guests in attendance included Robert Chloupek, M.D., E. H. Heinrichs, M.D., Karl Wegner, M.D., David Bean, M.D., R. H. Quinn, M.D., J. A. Muggly, M.D. and Harvard Lewis, M.D.

Dr. Ryan moved to accept the minutes of the previous meeting as published and distributed. The motion was seconded and carried.

Dr. Lushbough introduced Dr. Gordon Held, the new councilor from the Yankton District.

1. REPORT OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS. Dr. Taylor, a member of this commission, presented the report.

MINUTES OF THE MEETING OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

12:30 p.m., Thursday
November 17, 1977

Howard Johnson Motor Lodge
Sioux Falls, SD

The meeting was called to order by O. M. Jerde, M.D., Chairman. Those present for roll call were Drs. O. M. Jerde, Bill Church, Patrick McGreevy, V. Janavs, W. R. Taylor, and Robert J. Foley.

Dr. Janavs moved to accept the minutes of the previous meeting as published and distributed. The motion was seconded and carried.

1. RESOLUTION FROM OPHTHALMOLOGY SOCIETY THAT THE SD ACADEMY OF OPHTHALMOLOGY DOES NOT FEEL THAT AN OPHTHALMOLOGIST'S PHYSICAL PRESENCE IS REQUIRED AT THE TIME HIS PRESCRIPTIONS FOR CONTACT LENSES ARE FILLED BY A TECHNICIAN.

Drs. Richard T. Tschetter and Thomas C. White of Sioux Falls and Dr. Tom Willcockson of Yankton were guests representing the Ophthalmology Society. After a brief discussion the three ophthalmologists agreed that no recommendation should be made to the Commission at the present time inasmuch as this matter is currently before the courts.

Representing the Optometry Society was Mr. Ron Schmidt, Attorney at Law. He presented to the Commission the Rules and Regulations adopted by the Board of Optometry.

Representing the opticians was Mr. Cal Carlson of Yankton. He reported to the Commission of his awareness that some opticians were fitting contacts directly from eyeglass lenses and not from an ophthalmologist's or optometrist's prescription, but assured the Commission that his office and, in fact, most opticians do not operate in this manner. He concurred with the physicians present that contacts should be fitted only on prescription of a licensed physician or optometrist and the patient should be referred back to the prescribing doctor for follow-up.

Action Taken: Dr. Church moved that the Commission accept these discussions for information only and that this matter be tabled. The motion was seconded and carried.

2. MEETING WITH THE WELFARE DEPARTMENT.

Bob Johnson informed the Commission that representatives of the Welfare Department had conflicting meetings

and would not be in attendance. After discussion, Dr. Church suggested that more specific information be gathered on problems involving the Welfare Department and this be obtained by asking each Commission member, District officers, and State officers and councilors to submit specific instances to the Executive Office.

Action Taken: Dr. McGreevy moved that an attempt be made to reschedule a meeting with representatives of the Welfare Department after additional information has been gathered for their consideration. The motion was seconded and carried.

3. REVIEW OF NURSE PRACTICE ACT

CONS

1. The law is vague and allows great latitude under the Nursing Board's rules and regulations.
2. If nurse practitioners want to prescribe, they may do so by meeting requirements for licensure as a Physician's Assistant.

Action Taken: Dr. Taylor reaffirmed the Council's and Commission's concern regarding nurse practitioners and moved that more and specific information be made available to the Commission for a further review on the subject before recommendation is made. The motion was seconded and carried.

4. REPORT ON PRIMARY CARE RESIDENCY FUNDING

Mr. Johnson reviewed the report of the Ad Hoc Committee on Graduate Medical Education in South Dakota along with the amendments made by the Council at their meeting on October 7 and 8, 1977.

Action Taken: Dr. Church moved to accept the report. The motion was seconded and carried.

5. REPORT ON DEFINITION OF DEATH

Mr. Johnson reviewed the report of the Special Committee on the Definition of Death and Council action to accept this report.

Action Taken: Dr. Taylor moved that the Commission accept the report of the special committee on the definition of death. The motion was seconded and carried.

6. REPORT ON LAETRILE PAPER

Mr. Johnson reviewed the Position Paper on Laetrile composed by the South Dakota State Medical Association. Action Taken: Dr. Janavs moved that the Commission accept the paper on Laetrile and directed that the executive office make this position paper available to the entire physician membership for their information and review. The motion was seconded and carried.

7. REPORT ON CERTIFICATE OF NEED LAW

Mr. Johnson gave the Commission an updated report on the Certificate of Need Law.

Action Taken: Dr. Foley moved that the Commission reaffirm its previous recommendation that the SDSMA oppose the inclusion of physicians in the certificate of need law. The motion was seconded and carried.

8. REPORT ON HOSPITAL RATE REVIEW LAW

Mr. Johnson gave an update on the Hospital Rate Review Law.

Action Taken: Dr. Taylor moved that the hospital rate review law be made available to SDSMA members for study and review, and reaffirmed the Commission's stand to actively oppose this law in the 1978 Legislative Session. The motion was seconded and carried.

The meeting adjourned at 3:30 p.m.

Dr. Odland moved to accept the report of the Commission on Legislation and Governmental Relations. The motion was seconded. A brief discussion ensued regarding the Nurse Practice Act and the Hospital Rate Review Law being introduced. **The motion carried.**

2. REPORT OF THE COMMISSION ON PROFESSIONAL LIABILITY. Dr. Rost, chairman of this commission presented an oral report for the Council's information. **Dr. Odland moved that the Council accept the report of the Commission on Professional Liability and authorize the Commission to proceed and to report to the Council at its April meeting. The motion was seconded and carried.**

3. Dean Wegner addressed the Council briefly and introduced Dr. David Bean, Chairman of the USD School of Medicine Department of Psychiatry. Dr. Bean stated he also serves as medical director for the Board of Charities and Corrections and superintendent of the Human Service Center. At the present time his primary concern is the budget for the Human Service Center; secondarily is his concern for the committal law which states that only mental health professionals can approve isolation or restraints for a patient. A mental health professional includes psychiatrists, psychologists, psychiatric social workers, etc. but excludes physicians not specializing in psychiatry. He requested that the State Medical Association assist in getting this changed, and **the Council directed Mr. Johnson to draft a change in this law and have it introduced in the 1978 legislative session.** Dr. Bean encouraged the physicians and the State Medical Association to take an active interest in the state's institutions and study and recommend means of upgrading these institutions.

4. REPORT ON HOSPITAL INSPECTIONS. Dr. Bell reviewed his experience regarding the inspection by the Health Department of his local hospital and reiterated his concerns that patient privacy is being violated. Dr. Harris stated this matter was discussed at the last meeting of the Liaison Committee with the Health Department.

Pros

1. By law the Health Department is responsible for inspection of non-JCAH accredited hospitals.
2. Health Department is getting an opinion from the Attorney General's office.

Cons

1. According to the opinion of the Association's attorney, the Health Department is overstepping its boundaries in these inspections.
2. This appears to be a PSRO function.

Dr. Bell moved that this matter be referred to the Liaison Committee for review with regard to what is the mandate of the Health Department concerning hospital inspections, how are such inspections being carried out, and would it be advisable to have guidelines established for such inspections, and reported back to the Council. The motion was seconded and carried.

5. REPORT OF THE SPECIAL COMMITTEE ON LIVING WILL. This report was given by Dr. Heinrichs, chairman of the special committee.

REPORT OF THE SPECIAL COMMITTEE ON LIVING WILL LEGISLATION

The Committee at its meeting on November 22, 1977, in Sioux Falls considered similar legislation in forty-two states and a model bill. South Dakota presently has no statute on this topic. The present state of law is, therefore, that a patient has a right to give his physician instruction regarding his own treatment, either verbally or in writing. The physician can either follow or disregard these instructions but has an obligation to follow the instructions or to withdraw from the patient or to contest the instructions in the court of law. If the instructions are given in writing, there is no required form.

In following or disregarding the instructions the physi-

cian's actions, if judged at all, will be judged by common law, as distinguished from statutory law.

From the patient's viewpoint, living will legislation as proposed would not change any aspect of the present state of law but inject a legalistic procedure into the physician-patient relationship. The only influence effected by the proposed bill would be that the physician determines the time when the agreement becomes effective (by certifying the terminal illness) and giving the physician statutory immunity from civil and criminal charges when he acts as instructed.

The Special Committee on Living Will Legislation recommends therefore to the Council and the Commission on Legislation:

- 1) That the South Dakota State Medical Association not introduce or endorse "living will" legislation inasmuch as there is no compelling need for such a law at the present time, and
- 2) That the South Dakota State Medical Association endorse the guideline adopted by the House of Delegates of the American Medical Association in 1973 which states: "The cessation of the employment of extraordinary means to prolong the life of the body when there is irrefutable evidence that biological death is imminent is the decision of the patient and/or his immediate family."

E. H. Heinrichs, M.D.

Chairman

B. C. Gerber, M.D.

John Simko

Patrick McGreevy, M.D.

Dr. Gerber moved that the Council accept the report of the special committee on living will as policy of the State Medical Association and that this statement and recommendation be distributed to the members of the Association. The motion was seconded and carried.

6. LETTER FROM DR. STANLEY GRAVEN REGARDING PERINATAL PROGRAM. Dr. Ryan briefly discussed this matter and stated that in conjunction with this and similar programs he is concerned and feels the State Medical Association should be concerned with the delivery of care in South Dakota, particularly in the western part of the state, and with establishing criteria for each hospital in South Dakota as to which services each hospital is capable of providing, etc. Dr. Heinrichs reviewed the report of the special committee on standards for intensive care nurseries and the action taken by the Council, Dr. Leigh reviewed the activities of the HSA task force on the perinatal program, and Dr. Saylor discussed problems involved with the EMS plan which also includes perinatal programs. Following discussion **Dr. Bartron moved to remove from the table action taken by the Council at their last meeting regarding the report of the committee on standards for intensive care nurseries. The motion was seconded and carried.** Following a review of previous recommendations and action taken, **Dr. Bartron moved that the State Medical Association implement the recommendation of the Commission on Medical Service regarding the report of the committee on standards for intensive care nurseries; such recommendation to include the intent of the Commission not to limit pediatric care provided by family practitioners or other physicians not necessarily pediatric specialists. The motion was seconded and carried.**

7. REPORT OF THE EXECUTIVE COMMISSION. Dr. Ryan presented a report on the meeting of the Executive Commission held on January 6. He stated the commission reviewed the proposed budget and this will be sent to the Council for their consideration and recommendation at the April meeting.

8. APPOINTMENT OF SODAPAC BOARD OF DIRECTORS.

Dr. Aspaas moved that the Council appoint the following

to serve a one year term on the SoDaPAC Board of Directors as recommended by the Board: T. J. Wrage, Jr., M.D.; W. R. Taylor, M.D.; Curtis Wait, M.D.; R. C. Jahraus, M.D.; J. H. DeGeest, M.D.; Bill Church, M.D.; R. I. Porter, M.D.; N. R. Whitney, M.D.; Harvard Lewis, M.D.; Raymond Nemer, M.D.; James Ryan, M.D.; L. F. Nelson, M.D.; Mrs. Marlys Porter and Mrs. Shirley Bloemendaal. The motion was seconded and carried.

9. APPOINTMENT OF THE ENDOWMENT BOARD OF DIRECTORS.

Dr. Ryan moved that the Council appoint Dr. G. E. Tracy, Dr. Warren Jones, Dr. Anthony Javurek and Dr. Durward Lang to serve a one year term on the Endowment Board of Directors. The motion was seconded and carried. Dr. Ryan moved that the four members of the Board serve as a task force and recommend to the Council three additional physicians to serve on the Endowment Board. The motion was seconded and carried.

10. RECOMMENDATIONS FOR HONORARY LIFE MEMBERSHIP.

The Mitchell District Medical Society nominated L. W. Tobin, M.D. for honorary life membership and the Sioux Falls District nominated F. C. Kohlmeyer, M.D. Dr. Gere moved that Dr. L. W. Tobin be named an honorary life member. The motion was seconded and carried. Dr. Rossing moved that Dr. F. C. Kohlmeyer be named an honorary life member. The motion was seconded and carried.

11. NOMINATIONS FOR DISTINGUISHED SERVICE AWARD AND COMMUNITY SERVICE AWARD. Nominations for these two awards were received and will be sent to the special committee for their review and recommendation to the Council for vote at the April Council meeting.

12. DISCUSSION ON HEALTH CARE DELIVERY. Dr. Ryan reiterated his remarks concerning the delivery of health care in South Dakota, particularly in the western part of the state, and his concerns regarding hospitals and the services which they provide. He invited the Council members to give some thought to these matters and make recommendations and comments concerning this at a future meeting.

13. REPORT OF THE LONG RANGE PLANNING COMMITTEE. Mr. Johnson briefly reviewed this report for the information of the Council.

LONG RANGE PLANNING COMMITTEE

1:00 P.M. Howard Johnson Motor Lodge
December 13, 1977 Sioux Falls, South Dakota

The meeting was called to order by T. H. Sattler, M.D., Chairman. Present for roll call were Drs. Sattler, James Wunder, J. A. Muggly, Karl Wegner, E. H. Heinrichs, Michael Pekas and Dennis Johnson. Also in attendance were Robert Johnson and Jerry Maginn.

The minutes of the previous meeting were reviewed. Dr. Heinrichs moved that on page 2 of Identified Problems, item 6 A., the words "Title 19" should be omitted. The minutes were approved with this correction.

The following subjects were discussed by the Committee on Long Range Planning:

1. GRADUATE MEDICAL EDUCATION—The committee reviewed the report of the Ad Hoc Committee on Graduate Medical Education. The Long Range Planning Committee noted that a recommendation has been made that residency programs should be affiliated with the USD School of Medicine in order to receive state funds.

2. STATE HEALTH DEPARTMENT

A. Public Health Nurses—Dr. Heinrichs discussed the five-year plan which has been developed for

public health nurses. Dr. Heinrichs moved that the five-year plan be referred to the Commission on Legislation and Governmental Relations for study and recommendation.

The motion was seconded and carried.

- B. Rate Regulation—Mr. Johnson reported that the Executive Committee of the SDSMA and the Board of Directors of the Hospital Association met on December 2nd. There are differences between the Medical Association and the Hospital Association regarding the Hospital Rate Review Law. The Hospital Association did agree that physicians' offices should not be included in the Certificate of Need Bill. Dr. J. A. Muggly recommended that the Long Range Planning Committee reaffirm its opposition to the Rate Regulation Bill. The motion was seconded and carried.

- C. South Dakota Perinatal Project—After a lengthy discussion on this subject, Dr. Heinrichs moved that the Council review the HSA Task Force paper on the perinatal project through an ad hoc committee and respond to that task force paper. The motion was seconded and carried.

3. HSA—Jerry Maginn, the Medical Association Socio-Economic Coordinator, reported on the work of the HSA in recent months. He reported that attendance has been very good at the task force meetings and has requested that the HSA office keep the SDSMA informed of all meetings. These meetings are also open to the public. About seventy physicians have been appointed to serve on the HSA Task Force.

4. NURSE PRACTICE ACT—A discussion was held on the Nurse Practice Act. Concern was expressed that the present law may be too vague. It was suggested that the Medical Association make a study of the guidelines and rules adopted by the Board of Nursing for the prescribing practices of nurse practitioners. The possibility of a law being introduced in the State Legislature allowing nurse practitioners to prescribe was discussed. The Long Range Planning Committee suggested that the Council pursue this in depth and study the effect of this proposal on health care delivery in South Dakota. It was suggested that the District Medical Society invite their legislators to a special meeting to discuss legislative issues of importance to physicians in South Dakota.

5. DEPARTMENT OF SOCIAL SERVICES—EPSDT—CHAP—The Long Range Planning Committee reviewed the paper prepared by Dr. E. H. Heinrichs on this program. Dr. Heinrichs moved that this paper be referred to the appropriate commission of the SDSMA and that the commission consult with pediatricians and family practice physicians in the state and submit a report at the 1978 annual meeting of the SDSMA. The motion was seconded and carried.

6. HOSPITAL ASSOCIATION—After discussion on the relations between medical staffs and hospital boards in South Dakota and throughout the country, Dr. Muggly suggested that an effort be made through the Medical Association and Hospital Association to recommend that a physician be named to serve on the Board of Directors of every hospital in the state. The motion was seconded and carried.

7. GOVERNMENTAL MEDICINE—The Long Range Planning Committee discussed the rural outreach program in Bryant, South Dakota. The committee shared the concern expressed by the Council for that particular project.

8. MALPRACTICE—Mr. Johnson gave a verbal report for the information of the Long Range Planning Committee.

9. **REPORT OF THE COMMISSION ON THE COST OF MEDICAL CARE**—The summary of this report was discussed. The Long Range Planning Committee feels that when the entire report is available, it should be reviewed in depth by the appropriate commission of the South Dakota State Medical Association.

10. **PHYSICIAN RECRUITMENT PROGRAM**—The Long Range Planning Committee suggested that a physician recruitment program should be developed and submitted to the Executive Committee for consideration.

A definite date for the next meeting was not established. The meeting adjourned at 4:45 P.M.

Dr. Bartron moved that the Council accept the report of the Long Range Planning Committee. The motion was seconded and carried.

14. REMARKS BY DR. CHLOUPEK.

A. SUDDEN INFANT DEATH SYNDROME (SIDS) PROGRAM

Pros

1. Program is primarily for psychological support of the victims' families.

Cons

1. Previously not endorsed by the Commission on Medical Service or by the Council.
2. Application for grant funds has already been completed and program is beginning.

Dr. Tracy moved to refer this matter back to the Commission on Medical Service for their review along with consultation with the Pediatric Society. The motion was seconded and defeated.

B. HOME HEALTH CARE DELIVERY SYSTEM. Dr. Chloupek explained that funding for this proposal is part of the budget request submitted by the Department of Health to the 1978 Legislature.

Pros

1. Proposal should cut utilization of nursing home services.
2. \$1,750,000 funding requested would be federal monies.
3. Patients would not have to be released from hospital before being eligible for services.
4. No services provided without a physician's orders.
5. Central administration will eliminate paperwork.
6. Advantage to having patients in their own home, physically and emotionally.

Cons

1. Could eliminate some who really need nursing home services.
2. Possibility funds may be utilized by Public Health Nursing Program also.
3. Will funding be available for all areas of the state based on need?
4. Overlap of services provided through other programs.
5. Nursing homes are in desperate need of additional funding, and this program will not alleviate their need.
6. Statewide and centrally administered program does not mean it is necessarily good.
7. Program may be more costly to some counties.
8. May promote overutilization of services inasmuch as monies are reimbursed by federal government for the services rendered.
9. This could be more costly than keeping patients in nursing homes.

Dr. Bartron moved that the State Medical Association oppose the Home Health Care Delivery System proposal in its present form but endorse the concept and direct the Association's lobbyist to appear before the appropriate legislative committee to express the concerns of the State Medical Association. The motion was seconded and carried.

15. **CONTINUING MEDICAL EDUCATION.** Mr. Johnson encouraged the physicians to report their CME hours to the state office so they may be properly recorded. He stated a letter will be sent to all physician members indicating the number and category of credit hours reported to the state office for 1977.

16. **REPORT OF THE LIAISON COMMITTEE WITH THE HEALTH DEPARTMENT.** Dr. Harris reported briefly on the last meeting of the Liaison Committee and stated that items discussed included the home health care proposal, hospital inspections, the state health coordinating committee (appointed by the Governor 60% of whom must be members of HSA committees), review work being done by SHIFDA and his concern that the cost for such review work may increase considerably, and indications that appropriateness review will be coming within the next few years.

17. **AMA REGIONAL SCIENTIFIC MEETING.** Dr. Quinn reviewed a proposal from the AMA to hold a regional continuing medical education meeting in South Dakota in 1979. He stated that representatives from the AMA would be coming to South Dakota to discuss this proposal with representatives of the Medical School and the State Medical Association office and a report would be sent to the Council at a later date.

18. **ENT CIRCUIT RIDER PROGRAM.** Dr. Quinn reviewed this program briefly and stated that Dr. John Gregg will be joining the School of Medicine and will serve as coordinator for this circuit rider program. He stated that the LCCME has recommended that the USDSM develop a visiting professional type program in South Dakota, and this circuit rider program will fulfill this recommendation. The program is a pilot project and is intended for educational purposes primarily not to infringe on any physician's private practice.

19. **LEGISLATIVE UPDATE.** Mr. Johnson reviewed legislative matters and bills which have been introduced into the 1978 legislative session.

A. **Hospital Rate Review Law**—this bill is scheduled for hearing on Monday morning in the Commerce Committee.

B. **Concurrent Resolution from the Governor**—this calls for studying alternative methods for cost containment of health care in South Dakota. **Dr. Bell moved that the State Medical Association support the proposed Concurrent Resolution. The motion was seconded and carried.**

C. **Generic Drug Legislation**—**Dr. Gerber moved that the Council support a dual line prescription form in terms of generic drug substitution legislation and that any bill include reference to "therapeutic equivalency."** The motion was seconded. **Dr. Bartron made a substitute motion to authorize the Commission on Legislation and Governmental Relations and the Executive Secretary to write an appropriate bill regarding generic drug substitution for introduction into the 1978 Legislature. The motion was seconded and carried.**

D. **Optometry Legislation**—this is a House bill and it is anticipated testimony will be scheduled in about two weeks.

E. **Bill Allowing Nurse Practitioners to Prescribe**—this will be opposed by the Nurses Association.

F. **Student Loan Program**—this bill will allow the Board

of Regents to sue students who accept loans for medical school and then do not return to South Dakota to practice. This is in addition to repaying the loan with interest.

- G. Certificate of Need—the Health Department was unable to find a sponsor for this bill with physicians' offices included; therefore the sponsor will request an amendment to strike physicians from the bill.
- H. Proposal from the Department of Social Services which would require a statement of certificate of need for patients entering hospitals and nursing homes—this is being opposed by the Nursing Home, Hospital and State Medical Associations.
- I. Bill to abolish the Basic Science Board—Dr. Odland moved that the Association advocate the continuation of the Basic Science Board as a viable board. The motion was seconded and carried. 1 abstention.
- J. Expansion of lay members on the state boards—Dr. Taylor moved that the State Association express its concerns regarding this proposal with particular regard to the increased cost, but not vehemently oppose this proposal. The motion was seconded and carried.
- K. Legislation which would involve physicians' signatures in abortions—the Association will follow previous policy to keep physicians out of any abortion controversy.

20. SHIFDA'S HEALTH PLANNING PROCESS. Dr. Saylor reviewed a letter which he received from the Health Department asking him to attend a meeting regarding drug, alcohol treatment and/or prevention. He stated he would be unable to attend but would ask one of his Commission members to attend and report on this meeting.

Dr. Ryan called a meeting of the Executive Commission immediately following the Council meeting.

Dr. Lushbough announced the next meeting of the Council will be held April 14, 15, 1978, in Sioux Falls.

The meeting adjourned at 2:45 p.m.



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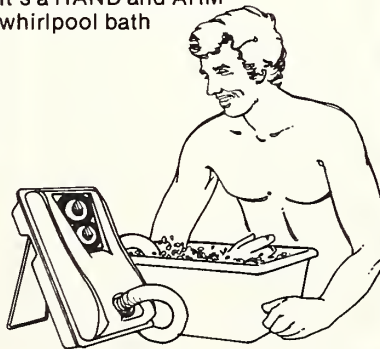
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THROAT CULTURES FOR BETA HEMOLYTIC STREPTOCOCCI

The most common and serious cause of bacterial pharyngitis is group A beta hemolytic streptococcus (GABHS). Although other organisms such as corynebacterium diphtheriae and occasionally haemophilus hemolyticus may cause pharyngitis, these are relatively rare. It has been well established that pharyngitis due to GABHS cannot be differentiated from viral pharyngitis by clinical examination. Therefore, throat cultures are necessary to make the diagnosis of GABHS pharyngitis.

Diagnosis and treatment of this condition are important because (1) complications of streptococcal infection such as peritonsillar abscess and spread of the infection to other areas can be prevented, (2) non-suppurative sequelae such as acute rheumatic fever can be prevented by early and adequate treatment, (3) transmission of the organism to other patients can be prevented by adequate treatment of infected patients and carriers. The above would suggest that significant amounts of group A beta hemolytic streptococcus in cultures from the throat should require treatment with penicillin.

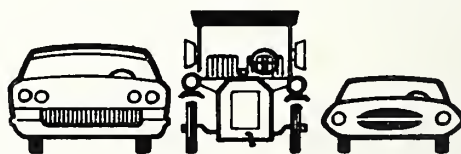
Since throat culture is often done as an office procedure, I would make the following comments for throat culture to be a more helpful office procedure: (1) sheep blood plates should be used exclusively for the culturing of this organism, (2) a provision for subsurface growth such as digging into the agar or anaerobic atmosphere should be provided to demonstrate all potentially beta hemolytic colonies.

It may be necessary to determine whether a beta hemolytic streptococcus is truly group A. This can be done with fluorescent antibody if available but is commonly done by the use of the bacitracin disc. If this latter method is used, the test should be done on a pure culture of the organism isolated on the sheep blood. The proper bacitracin disc for diagnosis of GABHS should be used. Any zone size of inhibition is presumptive diagnostic evidence of the presence of the organism.

John F. Barlow, M.D.
Pathologist

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CLINICOPATHOLOGICAL CONFERENCE

*From the Intern and Resident Teaching Conferences at the Sioux Valley Hospital, conducted by
the Department of Pathology of the Hospital and of the School of Medicine
of the University of South Dakota*



FOURTEEN YEAR OLD GIRL WITH HIRSUTISM OF ONE YEAR'S DURATION

James A. Oakland, M.D.*

S. G. Lee, M.D.**

Discussers

John F. Barlow, M.D., FCAP***

Pathologist—Editor

Case No. 715277

This 14-year-old Caucasian female was admitted because of hirsutism of one year's duration.

Approximately one year prior to admission, the patient noticed increased hair growth starting on the upper lip and lower chin. Three months prior to admission, the patient noted the appearance of sideburns. She also noted hair around the nipple area. For six months, she had noted some deepening of the voice. The patient complained of no headaches or visual difficulties. At age 12 to 13, the patient had developed secondary sex characteristics with axillary and pubic hair and some breast enlargement. The patient had failed to have any menarche. During the past several months, the patient had had a 20-pound weight gain and had noted a small amount of foul yellow vaginal discharge in the last two months. Plasma testosterone levels obtained on an outpatient basis were markedly elevated. 17 ketosteroids and 17 hydroxysteroids were within normal limits.

The patient had had no fever, night sweats, gastrointestinal, genitourinary or cardiorespiratory complaints. Ten years prior to admission she had had a benign cyst removed from the kidney and a right tonsillectomy for traumatic puncture of the tonsil. Two years prior to admission, she had had a torn cartilage of the right ankle and one year prior to admission a fracture of the right ankle.

PHYSICAL EXAMINATION: pulse 64/min. and regular, respirations 16/min. and regular, blood pressure 156 systolic and 60 diastolic. Height 5'8", weight 150 lbs. The patient had severe hirsutism of the upper lip and chin with some sideburns. There was no frontal balding. The breasts were small, but the areolae were well developed and there was a large amount of hair about the nipple. The pubic and axillary hair were well developed and there was a semi-male escutcheon. The patient had a slightly boarse, high pitched voice. Examination of the head, eyes, ears, nose, and throat was unremarkable except for an absent right tonsil. There was no palpable cervical lymphadenopathy and the thyroid was not enlarged. The chest was

clear to auscultation and percussion. The heart had a normal sinus rhythm with no gallops. There was a Grade II early soft systolic murmur at the apex with no radiation. The peripheral pulses were within normal limits. The abdominal examination revealed no palpable spleen or liver. There was a 10 x 12 cm. suprapubic mass which was soft, regular, fluctuant and moveable extending to just under the umbilicus. Pelvic examination revealed the external genitalia to be within normal limits except for an enlarged clitoris measuring 4.5 cm. in length and 1.2 cm., in greatest diameter. The introitus was virginal; the cervix was small, and the uterus was palpable in the anterior position. The cervical uterine ratio was about 1:2 indicating an infantile type uterus. There was a huge cystic pelvic mass which extended upward into the abdomen. Neurologic examination was within normal limits.

OUTPATIENT LABORATORY DATA: Vaginal pap smear—Class I with marked atrophy. Cortisol 13 ug/dl (normal 2-25 ug/dl), testosterone 159 and 285 ng/dl (normal 30-120 ng/dl).

HOSPITAL LABORATORY DATA: Urinalysis—slightly turbid, yellow, specific gravity 1.010, pH 6.5, negative for protein, glucose, reducing substances, ketone bodies, bile and hemoglobin; sediment 0 to 1 white cells per high power field. Pregnancy test was negative on two occasions. Hemoglobin 15.4 gms/dl, red count 5.56 million/mm³, hematocrit 44 vols/dl, mean corpuscular hemoglobin 28 micrograms, mean corpuscular volume 79 cubic micra, mean corpuscular hemoglobin concentration 35%, total leukocyte count 5,900/mm³, with 39% segmented neutrophils, 3% neutrophilic bands, 5% eosinophils, and 54% lymphocytes. The platelets were normal in number and morphology and the red cells were normochromic, normocytic on smear. Lactic dehydrogenase, alkaline phosphatase, aspartate aminotransferase (SGOT), total bilirubin, calcium, total protein, inorganic phosphorus, glucose, blood urea nitrogen, creatinine, uric acid, cholesterol, total thyroxine (T₄) were within normal limits. A buccal smear was read as showing many Barr bodies typical of a chromatin positive normal female smear.

IMAGING DATA: Ultrasound examination revealed a huge sonolucent mass thought to be an ovarian cyst. Chest film and skull films were unremarkable. An excretory urogram showed minimal dilatation of the proximal left collecting system, apparently secondary to a pelvic soft tissue mass. There was an absent right kidney. An operation was performed.

DR. OAKLAND: The terms "hirsutism" and "virilism" are used at varying times to describe this

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Supported in part by Clinical Cancer Training Grant T12 CA 08032 from the National Cancer Institute of the National Institute of Health U.S. Public Health Service.

and other similar patients. Consideration of what these terms mean is basic to evaluation of such patients. Hirsutism and virilism are stages in a continuum based on increasing androgen excess. These signs are modified by many separate factors that result in varying sensitivity to androgens. Thus, with inappropriately heavy hair growth in androgen responsive areas, such as in the beard and moustache region, hirsutism is defined. Hirsutism in a blond Scandinavian may be quantitatively less than normal facial hair in a woman of Mediterranean origin and yet represent significant hirsutism. With progression to clitoral hypertrophy, deepening of the voice, temporal hair recession, and balding, the diagnosis of virilism is made. The patient presented today gives a history of hirsutism with progression along the continuum to virilism with masculinizing features of deepening and hoarseness of the voice and clitoral hypertrophy. The association of hirsutism with virilization is an indication for endocrine studies which were undertaken as noted. A physician confronted with the possibility of "pathologic" androgen excess must seek the source of hormone overproduction.

The two sources of endogenous androgen in females are the adrenal gland and the ovary. Adrenal causes of androgen overproduction are congenital adrenal hyperplasia, adrenal tumor, and Cushing's syndrome. Rarely, androgen excess due to congenital adrenal hyperplasia is unrecognized until the second or third decade. If the patient's blood pressure is elevated and if her physical appearance does suggest Cushing's syndrome, plasma cortisol determination of an early AM sample and a PM sample in addition to a two hour post-prandial glucose serve as a good screen for the overproduction of cortisol. The patient as described showed no signs of these entities.

Probably the most common cause of hirsutism due to an ovarian source is polycystic ovarian disease (PCO). The usual story is that of a young woman having several normal menstrual periods followed by oligomenorrhea. They have an increase in facial and body hair. Many have acne. Obesity is another feature. Early in this patient's course as presented, this must have been a consideration. However, as her masculinization increased, the consideration of PCO seems to be less tenable. Only rarely will a patient with PCO be found with clitoral enlargement to the degree described.

Apart from adrenal or ovarian androgen overproduction in the hirsute patient, as this patient was described as being early in the course of her disease, other circumstances are to be considered. Hypothyroidism, variants of anorexia nervosa, use of

diphenylhydantoin and injudicious use of testosterone are other causes of hirsutism.

As previously mentioned, when the patient presented and was examined, it was noted that this patient was not only hirsute but was also virilized. Knowledge as to whether a pelvic exam had been performed prior to this evaluation would be helpful. Regardless, a search for the excess androgen source was indicated and undertaken. One of the indications for 17-ketosteroids determination is the onset of hirsutism. The 17-ketosteroids results from transformation of steroids secreted by the adrenal cortex and ovary. In men, the adrenals account for about 80% of the ketosteroids produced per day and in women over 90% are derived from adrenal sources. The remainder is normally derived from the gonads. Since testosterone production in normal men is relatively low to begin with, a relatively small amount of 17-ketosteroids are derived from this source. And if a woman had, for instance, an ovarian tumor secreting a similar amount of testosterone per day, as in the normal male, the 17-ketosteroids would be within normal limits. Considering the relative lack of precision of the 17-ketosteroid assay, this amount of increase would be undetectable. It is, therefore, possible to have severe virilization from a gonadal source with a normal 17-ketosteroid excretion since the latter mainly reflect adrenal androgen production.

In spite of this observation, measurement of 17-ketosteroids may be useful. When virilization is due to adrenal tumor or congenital adrenal hyperplasia, the 17-ketosteroids are almost always increased. The adrenal cortex and tumors thereof are often not capable of testosterone synthesis. Adrenal tumors or adrenal hyperplasia may produce androgens but these are derived from large amounts of precursors secreted by the adrenal with secondary conversion to testosterone and 17-ketosteroids. In contrast, virilizing tumors of the ovary such as arrhenoblastomas or interstitial cell tumors may synthesize testosterone quite efficiently but they may behave like adrenal tumors with production of elevated 17-ketosteroid compounds. Therefore, given a woman with severe virilization, a normal level of urinary 17-ketosteroids strongly suggests an ovarian tumor; but increased levels do not help in the localization. The degree of excretion of 17-ketosteroids may be helpful; very high levels are almost pathognomonic of adrenal carcinoma.

In hirsute women, the urinary 17-ketosteroids are high normal or slightly increased. This is often caused by increased ovarian secretion of precursors of the 17-ketosteroids such as androstenedione and testosterone as pointed out by Kirschner in 1971.

The ovarian contribution may be detected by measuring 17-ketosteroid excretion after complete suppression of the adrenal with dexamethasone as proposed by Jayle et al. Unfortunately, this may simultaneously suppress ovarian steroid secretion so the test is unreliable. Furthermore, with dexamethasone suppression, the remaining 3 to 4 mg. of 17-ketosteroid excreted by the ovary may not be detected due to insensitive laboratory methods.

Extensive studies of plasma testosterone in relation to hirsutism and virilism have been undertaken. Virilization is usually seen with increased testosterone levels and hirsutism often is. Many factors may affect the level and biologic activity of testosterone in plasma. From a practical point of view, it is helpful only if the value is unusually high. In the great majority of virilizing ovarian tumors, the plasma testosterone level is elevated four to five times the normal values.

In returning to this patient, the high testosterone level in association with a pelvic mass directed the clinician to the ovaries as the source of the excess androgen. The plasma 17-ketosteroids and 17-hydroxysteroids would support this supposition for reasons previously stated. Few masculinizing ovarian tumors have been reported in children and adolescents. In those which have been reported, mention has been made that clitoral hypertrophy and other signs of virilization are more marked than would be expected in view of relatively low excretion of 17-ketosteroids. An ovarian tumor, discovered on pelvic exam, in a patient with virilization is diagnostically definitive. Masculinization in an adolescent girl, discovered to have an ovarian tumor, usually leads to the tentative diagnosis of arrhenoblastoma. A definitive diagnosis must await histologic study of the neoplasm.

A tumor of the ovary suggests that it is the cause of this girl's symptoms, but other conditions which may be responsible for postnatal masculinization must be excluded. In the pre-menarchal adolescent these are the adrenogenital syndrome and Stein-Leventhal syndrome (PCO). The typical case of adrenogenital syndrome will give a similar history of gradual onset of increased body hair. Patients tend not to be obese, have good muscular development and are physically active. They exhibit marked clitoral hypertrophy but their internal genitalia are normal. Buccal smears are chromatin positive. The 17-ketosteroids are usually elevated in these patients.

Patients with Stein-Leventhal syndrome typically do not have clitoral hypertrophy or secretion of large

amounts of androgens. The genitalia are normal except for bilaterally enlarged ovaries.

DR. OAKLAND'S DIAGNOSES

*Arrhenoblastoma of the ovary
(Sertoli-Leydig cell tumor)*

DR. LEE: Thank you. A large left ovarian cyst which had no adhesions was removed by Dr. Russell Orr*. The capsule was smooth without penetration and there was no evidence of intraabdominal spread of tumor. My postoperative diagnosis was identical to Dr. Oakland's. This was confirmed by microscopic examination.

Before discussing the case itself, I should like to comment on the case presentation and discussion of Dr. Oakland's. He has covered the clinical aspects of the case history very well; it was a precise and accurate description of a rather difficult and complicated case. However, I wish to make a few comments on his interpretation of androgen metabolism in particular reference to plasma testosterone and 17-ketosteroids later in my discussion.

This 14 year old young lady was seen by me for consultation. The patient was admitted by Dr. Russell Orr for the management of severe hirsutism and palpable abdominal mass. Thanks to Dr. Orr's pre-admission laboratory work, my job was rather easy.

I would like to make a comment on the case history and physical findings in this patient. Her presenting symptoms were indeed bizarre ones with involvement of multiple systems. However, if we analyse the problems, we could categorize these signs and symptoms in a symptom-complex unique to a common denominator of etiologic origin. This etiologic common denominator is androgen. Androgen induced clinical manifestations can be complex. But there is one important principle to remember in hyperandrogen manifestations in the female—**this principle is that the defeminization process always precedes the masculinization process.** Our patient showed defeminization for the first six months of the year preceding her hospitalization. Amenorrhea, decrease in breast size, loss of body fat and mild hirsutism are classic examples of her defeminization process. Then typical signs of masculinization appeared during the final six months before hospitalization—severe hirsutism, clitoromegaly, deepening of voice and increase in muscle mass over the arms and shoulder. Thus, our patient has shown us the sequence of typical defeminization followed by masculinization unique to any androgen producing tumor such as Sertoli-Leydig cell tumors.

However, I want to make clear that all Sertoli-Leydig cell tumors are not androgen producing. About 5% of Sertoli-Leydig cell tumors have no endocrine activity and in some Sertoli-Leydig cell

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tumors the only clinical manifestation can be a feminization process. One case was reported in a young female child with precocious puberty. All of these findings are rare.

In order to understand some of the clinical diversity of androgen manifestations in general, I would like to present some of the basic concepts in androgen metabolism and biologic action. Let us consider testosterone as a model steroid androgen. Testosterone can be produced by the endocrine glands directly but it may be produced by the process known to us as extraglandular conversion of a prehormone such as androstenedione to testosterone. The sites of conversion are multiple but the major areas are the liver and dermis. Once testosterone (T) is released into the circulation, most of the hormone is bound by sex hormone binding globulin and a very small portion is left as a free fraction. It is vitally important to realize that only the free fraction of the hormone has biological activity. The bound or conjugated hormone is biologically inactive. Although the free fraction of T is very significant in terms of biological activity, it has to go through a very complicated subcellular process in the

androgen sensitive tissues before androgenic activity can be manifest. If the T (free fraction) is delivered to androgen sensitive target cells, T crosses the cell membrane by diffusion and enters the cytoplasm. It appears that T is metabolized by a 5 alpha reductase enzyme and converted into a dihydrotestosterone (DHT) which is far more potent than testosterone. DHT is bound to a specific cytoplasmic receptor site called cytosol forming a hormone cytoplasmic receptor complex. This hormone cytoplasmic receptor complex is then transferred through the nuclear membrane. The latter process is called translocation. Once the hormone cytosol complex is translocated into the nucleus, then it is bound to intranuclear receptor site and participates in DNA replication and synthesis of new RNA. This process is called transcription. The generated genomic information is carried by the messenger RNA. This newly programmed message is delivered to ribosomes and protein synthesis results in growth of hair or other manifestations. This process is called translation. Thus, androgenic activity is biologically manifested through a series of androgen receptive units in the androgen sensitive cell. (Fig. 1)

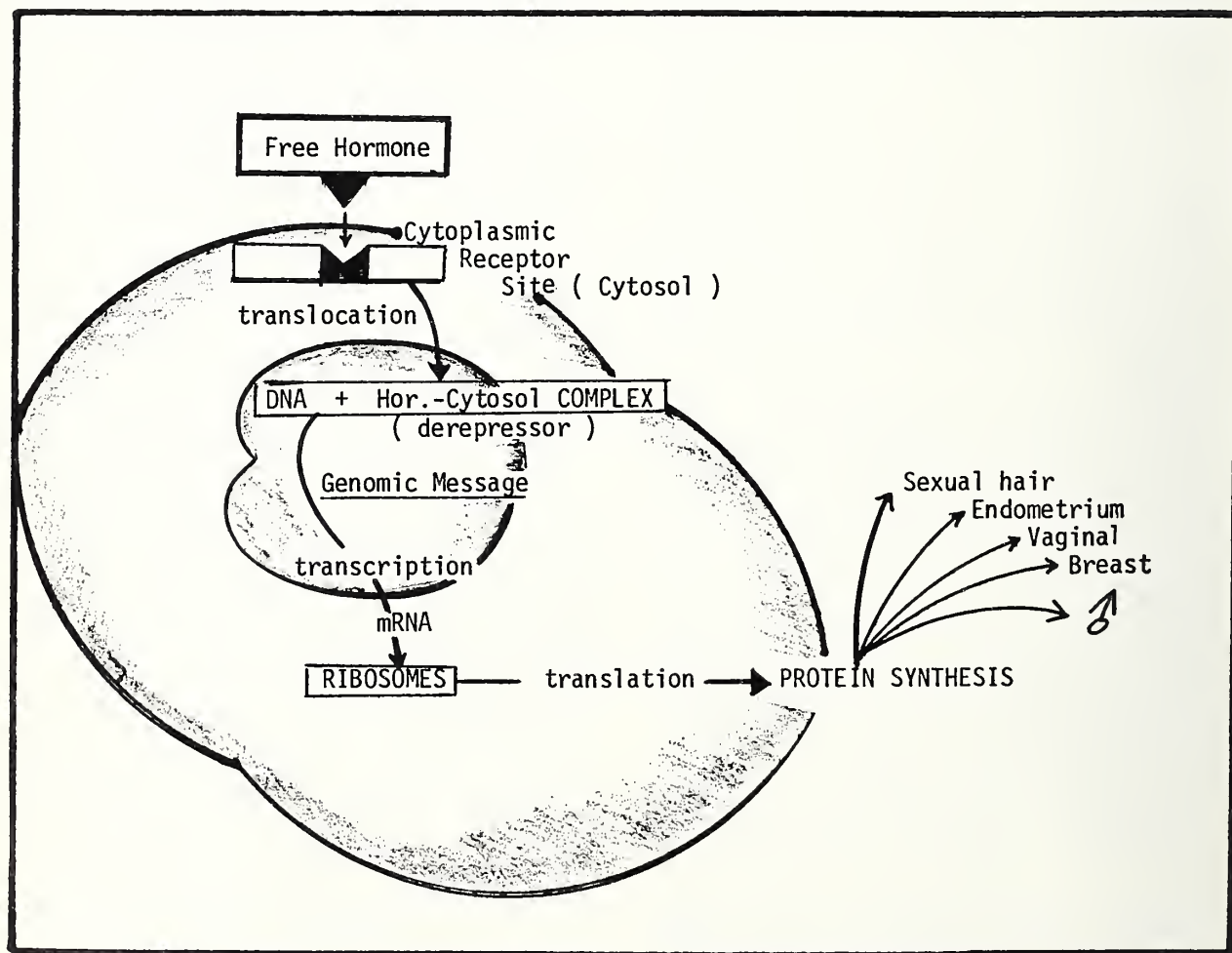


Figure 1

If we appreciate the above concept, some of the most intriguing and fascinating disease entities like the androgen insensitivity syndrome (better known to us as testicular feminization syndrome) and its basic pathophysiology can be more easily understood. The major defect in androgen insensitivity syndrome is the lack of subcellular receptor protein rather than lack of hormone production.

Let me make some comments on commonly used but often confused laboratory tests used in androgen assessment.

Plasma testosterone determination for the study of excess androgen manifestation is one of the most commonly ordered tests in such conditions as polycystic ovarian disease. In this entity severe hirsutism along with excessive acne formation occurs. If we are to order a plasma testosterone level (T) in such a patient, we may get a normal or even subnormal value. Then what is meant by plasma T? Ordinarily, plasma T refers to a total T level i.e. combination of free as well as bound fraction. Let us recall that circulating androgenic hormone must be in the free-state to be biologically active. Thus, what is important is the **RATIO** between the free and bound hormone. There are several factors that would change this free to bound ratio of the T in a clinical situation. One of the most well known is estrogen. Estrogen is a potent stimulant of testosterone binding globulin. Therefore, hyperestrogenic states create a decrease in free to bound ratio and androgenic biological activity would be less evident. This concept has been in fact extensively utilized in the management of excess androgenic states secondary to polycystic ovarian disease by giving combination type of oral contraceptive pills. The basic mechanism is to increase testosterone binding globulin by the estrogenic activity of the pills, thus reducing the free fraction of the circulating T.

The other essential consideration in evaluation of T levels is metabolic clearance of the hormone. When more T is produced, less synthesis of the binding globulin occurs and the hormone is more in the free fraction. Free hormone is more readily excreted causing an increased metabolic clearance rate. Therefore, the more T produced, the more it is cleared and excreted. So that if you measure the total T, the net value likely would be low but most of it is in the free fraction and thus confers extensive androgenic biologic manifestation at cellular level. Thus, the clinical significance of a total plasma T value without considering the ratio between free to bound fraction or without considering metabolic

clearance rate in a given patient is of limited use.

Lastly, one simple comment on 17-ketosteroids as a laboratory diagnostic test. 17-ketosteroids are urinary metabolites of androgens such as dihydroepiandrosterone, etiocholanolone and androsterone. It should be clearly remembered that not all androgen is metabolized and excreted in the urine as a 17-ketosteroid. Testosterone is a potent androgen but it is not metabolized and cleared in the urine as a 17-ketosteroid to any extent. Our patient showed a normal 17-ketosteroid in spite of a virilizing level of T.

***DR. JOHN MALM:** What then would you recommend for the screening test for an androgen excess state?

DR. LEE: In gynecologic practice, if you encounter a patient with androgen excess, over 90% of the cases will be in the category of polycystic ovarian disease. I personally believe that if you are a disciplined historian and examiner, you can make a diagnosis without having any laboratory tests at all in more than 60% of the cases. However, in some cases, you need a test in order to differentiate polycystic ovarian disease from adrenal androgen excess state. If your impression is congenital adrenal hyperplasia, plasma 17-hydroxyprogesterone or a urinary pregnanetriol value would be best as a screening test. However, if your impression is a pure adrenal androgen excess problem, urinary 17-ketosteroid and/or plasma dihydroepiandrosterone sulfate determination would be best as a screening procedure. In terms of defining an androgen excess state from ovarian origin such as polycystic ovarian disease, free plasma T determination is the choice of procedure. Unfortunately there are only a few labs measuring free or unbound T. The clinical correlations are so far excellent, but this area is at a research basis at the present time.

DR. BARLOW: Submitted was a smooth walled 17 x 10 x 5 cm. cystic mass which on cut section had a central large cyst and multiple small cysts containing turbid serous fluid. The wall had irregular yellow white tumor tissue (Fig. 2). On microscopic section many areas of the tumor showed ill-defined gonadal stroma. However, in a few areas, tubules were seen (Fig. 3); and, in other areas, cells with small oval nuclei and even distribution of the chromatin and abundant eosinophilic cytoplasm quite compatible with Leydig or interstitial cells were present. The tubules and the presence of these interstitial cells are diagnostic of so-called arrhenoblastoma or Sertoli-Leydig cell tumor. Since most of the tumor showed nondescript gonadal mesenchyme without much pleomorphism or mitoses, this tumor has to be considered of intermediate differentiation as discussed

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Figure 2

Gross tumor opened to show cystic appearance.

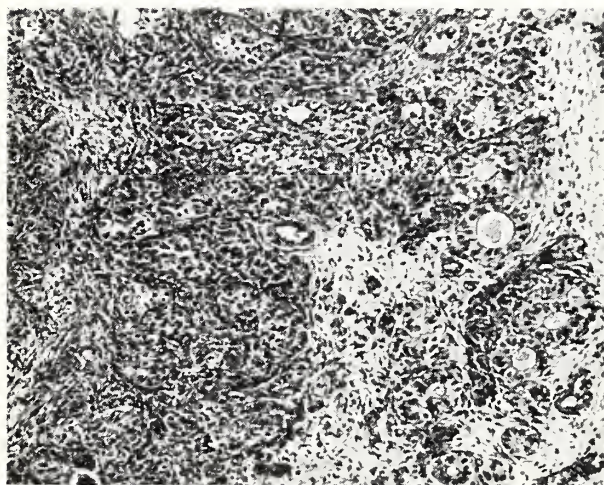


Figure 3

Tubule formation can be seen in lower right suggesting Sertoli cell differentiation.

below. It should be noted that when crystals of Reincke are found, the cells could be unquestionably identified as Leydig cells. Both in this tumor and in hilar cell hyperplasia, such crystals are diagnostic. I was not able to find typical crystals of Reincke in our case today.

Sertoli-Leydig cell tumors are the most common androgenic tumor of the ovary but still represent

only 1% of all ovarian tumors. I have seen five such tumors since I have been in Sioux Falls. Most Sertoli-Leydig cell tumors occur during the reproductive years, but they may be encountered at all ages. Three-fourths of the patients with these tumors show some degree of virilization. The tumors may be well differentiated, intermediate, or poorly differentiated indicating the proportion of undifferentiated mesenchyme or gonadal stroma and anaplasia thereof in contrast with more differentiated tubular Sertoli cell elements and Leydig cells. They may even contain heterologous elements such as mucinous epithelium, cartilage, or skeletal muscle. These heterologous elements were not present in the present tumor but I have one example of such a case. Examples of pure Sertoli and pure Leydig cell tumors exist but most contain a mixture of both elements. The Leydig cell is most likely the source of androgen in these tumors. As has been pointed out, the androgen is most likely to be testosterone. These tumors are almost always unilateral. The more undifferentiated variety may metastasize but I would think our patient has a reasonably good prognosis since the tumor is of intermediate differentiation and showed no adherence or spread at the time of surgery.

There are a host of androgenic lesions of the ovary. These include the Sertoli-Leydig cell tumor, lipid cell tumor, hilus (Leydig) cell tumor or hilus cell hyperplasia, stromal luteoma, gonadoblastoma, and granulosa-theca tumor. The lipid cell tumors are composed of clear cytoplasm with abundant lipid. Both benign and malignant varieties have been described. Normal Leydig cells are seen at the hilus. Either hyperplasia or tumor formation from this normally found group of cells may produce a virilizing process of the ovary known as hilus cell tumor or hyperplasia. Stromal luteomas are single or multiple tumors composed of luteinized cells. Gonadoblastoma is a rare tumor often associated with dysgenetic gonads. The granulosa-theca tumor is usually associated with estrogen production but cystic varieties may produce androgen.

It should be noted that benign tumors such as Brenner tumor, mucinous cystadenoma, and malignant tumors such as carcinoid tumor and strumacarcinoid as well as metastatic tumors to the ovary from the stomach (Krukenberg), colon or carcinoids of the bowel may be associated with a functioning stroma, consisting of luteinized stroma, which has been associated with excess production of androgens and/or estrogens.

Certain non-neoplastic lesions have also been associated with excess androgen production in the ovary. These include the polycystic ovary syndrome and hyperthecosis syndrome as well as luteoma of

pregnancy, and theca-lutein cyst. The polycystic ovarian syndrome has been discussed. Hyperthecosis is a stromal proliferation of the ovary in which are found luteinized cells. These cells have been incriminated in the production of excess androgen or estrogen. Luteoma of pregnancy is a tumor often seen in blacks.

As Dr. Oakland and Dr. Lee have pointed out, defeminization symptoms occur before true masculinization. Since some of the manifestations are irreversible, it is well to diagnose these tumors before changes become permanent. I would also like to again emphasize that 17-ketosteroids only reflect adrenal androgen and are not a test for androgens from other sources, and certainly not a test for adrenal glucocorticoid function. 17-ketosteroids should not be confused with determination of 17-ketogenic steroids which is a 24 hour urine test more or less equivalent to the 17-hydroxysteroids. The 17-ketogenic steroids measure the glucocorticoid function of the adrenal.

FINAL ANATOMIC DIAGNOSES SERTOLI-LEYDIG CELL TUMOR (ARRHENOBLASTOMA)

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Current Progress in
Obstetrics and Gynecology
Lecture #4—Premature Labor
Diagnosis and Treatment
Howard T. Gilmore, M.D.
Laura (Davis) Keppen

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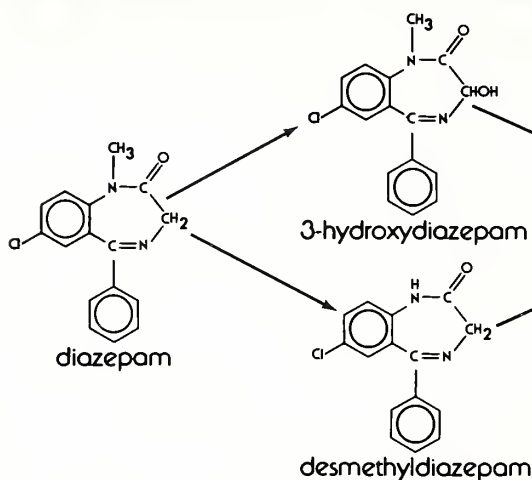
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Future Meetings

May

Vertigo, Fort Meade V. A. Hospital,
Fort Meade, SD, May 4. 1 elective
hr. Contact: Mr. Christenson, Adm.
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**Cardiovascular Diseases, Mayo Founda-
tion Outreach Seminar**, Mc-
Kennan Hosp., Sioux Falls, SD,
May 5-6. Four hours Category I
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**South Dakota Chapter, American
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Holiday Inn, Sioux Falls, SD, May
6. Contact: W. J. Mattson, M.D.,
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**Preventive Medicine Seminar, Inter-
national Academy of Preventive
Medicine**, Hilton Plaza Inn, Kansas
City, MO, May 6-7. Contact: IAPM
Headquarters, 10409 Town & Coun-
try Way, Houston, TX 77024.

**Medical & Surgical Diseases in Preg-
nancy**, Ballroom, Iowa Memorial
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gory I credits, 20 hrs. ACOG cred-
its. Contact: Dir. of Conferences,
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**Psychological Testing: Analysis of
Personality & Its Potential Signifi-
cance**, Fort Meade V. A. Hospital,
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The First World Medical Games,
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24th Annual Family Practice Review,
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Current Progress in Obstetrics and Gynecology

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Lecture #4

PREMATURE LABOR: DIAGNOSIS AND TREATMENT

by

Howard T. Gilmore, M.D.*

Laura (Davis) Keppen**

Prematurity is the leading cause of neonatal death and morbidity. Approximately 8% of newborns weigh less than 2500 grams. Using the criterion of weight alone, there are 250,000 premature births in the United States each year.¹ These infants account for two-thirds of all neonatal deaths, and two-thirds of all infants with residual neurologic damage. When evaluated for clinical signs of prematurity other than low birth weight, 5% of all infants are preterm (less than 37 weeks). Eighty-five percent of neonatal deaths not associated with lethal malformation are among this group.² Because of these overwhelming statistics, a safe, effective method of treating preterm labor is sought.

It is very important to establish the diagnosis of preterm labor. Some patients who present with spontaneous uterine activity will have false labor and need only rest, reassurance, and careful observation. If the patient is in labor, effective treatment must be initiated quickly before it progresses to a stage where delivery is inevitable. The diagnosis of premature labor is made between the 20th and 37th week of gestation when contractions occur at least once every ten minutes, and are accompanied by the cervical changes of effacement and dilatation, plus descent of the presenting part.

When the diagnosis of premature labor is established, the patient should be carefully evaluated to determine whether or not she is a candidate for labor suppression. The fetal heart rate should be monitored continuously for at least 30 minutes to make sure that there is no evidence of fetal compromise.

If no fetal compromise is detected, the patient is a candidate for labor suppression when the following criteria are met:³

1. Estimated fetal weight less than 2500 grams
2. Intact membranes
3. Absence of obstetrical or medical contraindications to continued pregnancy, and
4. Cervical dilatation less than 4 cm.

Suppression of labor is contraindicated when the following conditions exist:

1. Intrauterine infection
2. Ruptured membranes, unless the patient is a candidate for glucocorticoid therapy (less than 32 weeks)
3. Intrauterine fetal death
4. Preeclampsia
5. Excessive vaginal bleeding
6. Placental abruption
7. Feto-placental insufficiency
8. Cervical dilatation greater than 5 cm.
9. Fetal problems such as severe anomalies, polyhydramnios, or erythroblastosis fetalis.

When the decision to attempt labor suppression is made, there are two broad categories of therapeutic agents from which to choose: (1) agents which suppress uterine activity, and (2) agents which inhibit uterine stimulation. Uterine activity suppressants will be considered first.

The use of progestogens at various stages of pregnancy has been proposed, but their usefulness has been found to be limited. Early in pregnancy, they may be used to treat luteal phase deficiency.⁴ They may also be useful in preventing the onset of labor in limited circumstances, but they are of little use in the treatment of labor, once it has begun.⁶ If a progestational agent is used, the only one considered safe for use during pregnancy is 17 α OH

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**Third Year Medical Student - University of South Dakota School of Medicine.

progesterone caproate (Delalutin).⁷

Magnesium sulfate is the primary drug used in the treatment of preeclampsia. The observation has been made that it also diminished the strength of contractions, and can prolong labor. Steer and Petrie⁸ were able to demonstrate that magnesium sulfate was effective in 77% of cases when it was used as an agent to suppress labor. If the infusion was begun when the cervix was 1 cm. or less dilated, they were successful in 96% of cases. Treatment with magnesium sulfate is begun with the infusion of 4 grams of MgSO₄ by slow I.V. push. This is followed by a continuous infusion of a 2% solution of MgSO₄ at a rate of 100 cc/hr. until uterine relaxation occurs. Relaxation may then be maintained for as long as 48 hours by a continuous infusion of a 1% solution of 100 cc/hr. The treatment may be repeated as needed, but it must be discontinued immediately if there are signs of toxicity. Magnesium replaces the calcium ion, and in doing so, exerts its effect by decreasing acetylcholine release, decreasing motor end plate sensitivity, and decreasing the motor end plate potential.

Uterine and other smooth muscle contains alpha and beta adrenergic receptors.⁹ In general, stimulation of alpha receptors increases muscle activity, and stimulation of beta receptors decreases activity.¹⁰ Exceptions to this have been demonstrated, and have led to the finding of two types of beta receptors. Stimulation of type 1 beta receptors, which are found primarily in the heart, leads to an increase in muscular activity. Stimulation of type 2 beta receptors, found predominantly in uterine muscle, inhibits muscle activity. Since these facts have been known, considerable research effort has been expended in an attempt to develop and clinically test drugs which have type 2 beta activity with little cardiovascular effect.

One such agent is Vasodilan (isoxsuprine). Bishop and Woutersz¹¹ were able to delay labor at least 24 hours in 87% of 120 patients with preterm labor. The inhibition was effective whether the labor was spontaneous or induced. Their treatment was begun with the infusion of .25 - .5 mg/min. by intravenous infusion. The infusion rate was adjusted depending upon uterine effect and maternal side effect. The treatment was then continued with 5 - 20 mg IM every 3 - 6 hours for 24 hours, followed by oral medication on the same dosage schedule. It was noted that there was a high incidence of maternal hypotension when the infusion rate was .5 mg/min. Therefore, it is currently recommended that the infusion rate not exceed .15 mg/min. In sensitive patients, isoxsuprine has potent cardiovascular side

effects which should preclude its use, except under circumstances where maternal side effects can be rapidly detected and effectively treated.

Diazoxide has been shown to have a potent inhibitory effect on smooth muscle when used intravenously in doses of 60-300 mg.¹² It also has unpredictable side effects which contraindicate its use as an agent for labor suppression.

Other beta 2 mimetic agents have been investigated for their usefulness in suppressing labor. Among those which have shown promise are Ritodrine,^{13,14} Salbutamol,¹⁵ Terbutaline,¹⁶ and Fenoterol.¹⁷ None of these agents are currently available for use in the United States except on an experimental basis. Ritodrine^{13,14} has been used in several clinical trials, and has been demonstrated to be effective in suppressing up to 90% of properly selected patients in premature labor. This drug is given by the intravenous infusion of 50-350 micrograms/min. This dose is followed by oral medication in 10-20 mg. doses every 2-4 hours.

The second method of treating premature labor is by the use of agents which suppress uterine stimulation. Fuchs and Wagner¹⁸ demonstrated that the release of oxytocin could be inhibited by the administration of intravenous ethanol. Fuchs then used alcohol in an attempt to suppress labor, and was able to demonstrate successful inhibition in 67% of the patients studied.¹⁹ There has been considerable controversy about the efficacy and mechanism of action of ethanol, but several studies have confirmed its utility. Ethanol is administered as a 10% solution. It is begun at a rate of 7.5 ml/kg/hr. for 2 hours, followed by an infusion rate of 1.5 ml/kg/hr. for up to 10 hours. This treatment schedule should maintain a blood alcohol level of 150 mg%. If labor begins again after the alcohol is discontinued, a reloading dose should be calculated by the following formula:

$$\frac{\text{Reloading dose} = \text{Initial loading dose} \times \text{hrs. since ETOH discontinued}}{10}$$

Calculated in this manner, the blood alcohol level of 150 mg% should be reached, but not exceeded. Fuchs compared this treatment with Ritodrine, and found that alcohol was effective in 77% of patients compared to 87% of those treated with Ritodrine.²⁰ The primary disadvantages of the use of ethanol are the development of nausea, restlessness, intoxication of the mother and the infant, and the potential for vomiting and aspiration.

Another method of inhibiting the stimulation of labor is by the use of agents which inhibit prostaglandin synthesis and release. The importance of prostaglandins in labor has been implied by the

finding that they are increased in blood and amniotic fluid during labor. Labor or mid trimester abortion may be induced by their exogenous administration. Vane demonstrated that aspirin and Indomethacin block the synthesis of prostaglandins E_2 and $F_{2\alpha}$ and the prostaglandin precursor arachidonic acid.²¹ Zuckerman studied the effect of this agent on the suppression of labor.²² Treatment was begun by giving 100 mg. of Indomethacin by suppository. This was followed by 25 mg. orally every 6 hours until 24 hours after the cessation of uterine activity. Successful inhibition of labor was reported in 40 of 50 patients. There was no evidence of side effects in the 45 infants who survived. Recently, there have been warnings about the potential side effects of Indomethacin on the fetus. It has been used to close the patent ductus of certain neonates.²³ In experimental preparations using fetal lambs, it has been shown to have a similar constricting effect on the ductus.²⁴ Other side effects have included primary pulmonary hypertension²⁵ and severe neuronal damage which has been associated with increased rates of stillbirths in experimental animals.²⁶ Because of these potentially disastrous side effects, the use of prostaglandin inhibitors should be considered strictly experimental, and should not be undertaken until further studies demonstrating their safety have been performed.

SUMMARY:

Premature labor threatens the outcome of 5 to 10% of all pregnancies, and results in up to 85% of the neonatal mortality, and 65% of serious neurologic sequelae. When premature labor occurs, the patient should be seen promptly and thoroughly evaluated for possible labor suppression. They should then be treated under rigidly controlled conditions. When labor is effectively suppressed, time is gained during which the patient can be transported to a perinatal center where continued care can be given to the mother and where neonatal intensive care facilities are available. This is particularly important if the gestation is of less than 36 weeks duration. At the present time, the agents which can most safely be used for treatment are magnesium sulfate and ethanol. Other agents have shown promise, but at the present time, are either experimental or have side effects which make them unacceptable for routine use.

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The Blue Shield Association with the participation and advice of medical specialty groups such as: the American College of Physicians, the American College of Radiology, the American College of Surgeons, and the American Academy of Family Practice, has developed a program to reduce the incidence of medical procedures which contribute to cost without a parallel contribution to the quality of care.

While the Medical Necessity Program is the responsibility of the Blue Shield Association, these specialty groups working in their respective areas of practice have voluntarily assisted in the programs, by helping identify procedures which are, in most circumstances, of dubious current usefulness.

The following is a list of those procedures already identified:

Bronchoscopy—with injection of contrast medium for bronchography
Bronchoscopy—with injection of radioactive substance
Ligation of internal mammary arteries, unilateral
Ligation of internal mammary arteries, bilateral
Radical hemorrhoidectomy, Whitehead type, including removal of entire pile bearing area
Omentopexy for establishing collateral circulation in portal obstruction
Kidney decapsulation, unilateral
Kidney decapsulation, bilateral
Perirenal insufflation
Nephropexy: fixation or suspension of kidney (independent procedure), unilateral
Circumcision, female
Hysterotomy, non-obstetrical, vaginal
Supracervical hysterectomy: subtotal hysterectomy, with or without tubes and/or ovaries, one or both
Uterine suspension
Uterine suspension, with presacral sympathectomy
Ligation of thyroid arteries (independent procedure)
Hypogastric or presacral neurectomy (independent procedure)
Angiocardiography, single plane, supervision and interpretation in conjunction with cineradiography
Angiocardiography, multi-plane, supervision and interpretation in conjunction with cineradiography
Angiocardiography, utilizing CO₂ method, supervision and interpretation only
Angiography—coronary, unilateral selective injection supervision and interpretation only, single view unless emergency
Angiography—extremity, unilateral, supervision and interpretation only, single view unless emergency
Protein bound iodine (PBI)
Icterus index

Basal metabolic rate (BMR)

Phonocardiogram with interpretation and report, and with indirect carotid artery tracing or similar study

Ballistocardiogram

Fabric wrapping of abdominal aneurysm

Extra-intra cranial arterial bypass for stroke

Fascia lata by stripper for lower back pain

Fascia lata by incision and area exposure, with removal of sheet for lower back pain

Ligation of femoral vein, unilateral or bilateral for post-phlebitic syndrome

Excision of carotid body tumor, with or without excision of carotid artery for asthma

Sympathectomy, thoracolumbar, unilateral or bilateral for hypertension

Sympathectomy, lumbar, unilateral or bilateral for hypertension

Splanchnicectomy, unilateral or bilateral for hypertension

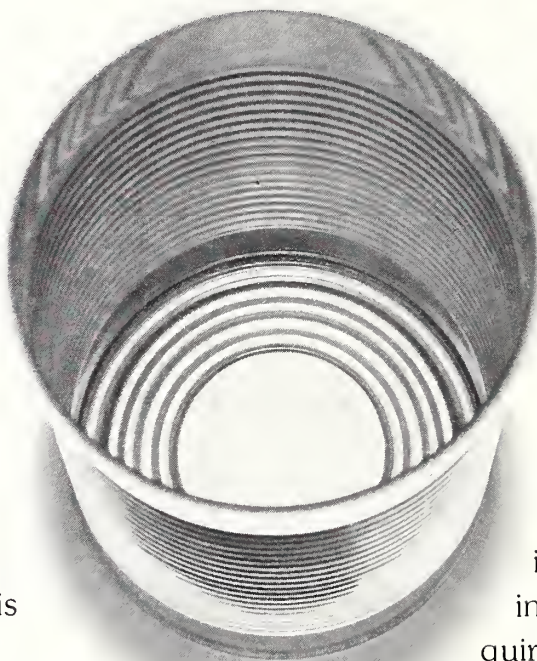
We do not recommend that physicians categorically discontinue these procedures. Almost every procedure can be medically justified in a specific instance. We do recommend, however, that each physician determine whether the results of any procedure justify the cost.

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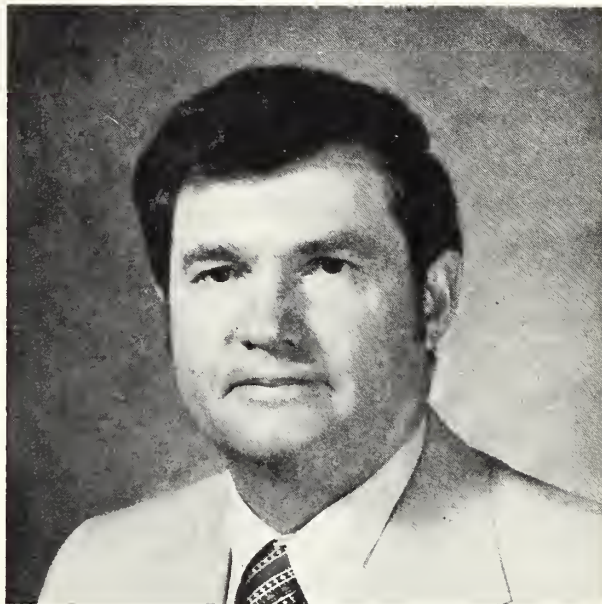
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Final classification of the less-than-effective indications requires further investigation.

Contraindications: Glaucoma; prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or clidinium Br.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

As with all anticholinergics, inhibition of lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

Adverse Reactions: No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated; avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.



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PATIENT PACKAGE INSERTS: A CONCEPT WHOSE TIME HAS COME?

The consumer's right to know is an irreversible and desirable trend of the Seventies. It extends, and properly, to a patient's right to know more about his or her prescription medications. One way, gaining favor, is through patient package inserts. Wisely prepared and properly distributed when medically indicated, they could markedly improve patient knowledge and drug therapy—laudable goals by anyone's standards.

The PMA endorses these goals and will work with government, the health professions and consumers to achieve them.

The Advantages

The concept holds promise of benefits: better patient understanding of the product prescribed, better adherence to the treatment plan, and more awareness of possible side reactions.

Every doctor has had patients who fail to finish antibiotic regimens because they feel better. Some patients assume that if one tranquilizer or analgesic is good, two may be twice as good. Still others fail to report dizziness while on antihypertensive therapy—and so on.

Problems like these might arise less often if the patient received written information in addition to verbal instructions. Some studies suggest that patients are more receptive to such materials, and they more often understand the verbal instructions and follow them, when inserts are used.

The Disadvantages

There are also some potential problems. Obviously, the inserts must be clearly phrased, without extraneous or complex detail. How much information

is enough? How can it be kept current? Should all patients receive the same information? Should inserts be included with all drugs? Should only potential problems be listed or are patients better off with a "fair balance" presentation that describes usefulness as well as drawbacks?

These and similar questions require answers, since model inserts have yet to be properly developed and tested. Despite the need for these studies, the FDA is proceeding prematurely with inserts on selected products. We think the Congress is the only place where the matter can be given the proper legal status and direction, particularly since it represents a conceptual change in the legal, medical and social framework of the nation's prescription drug information system.

The Solution

The PMA believes that carefully-devised pilot studies of various kinds of inserts are needed. They should be developed and implemented with full participation by doctors, pharmacists, consumers, communications experts and the drug industry. Such studies will provide reliable pathways to follow, so that inserts will be useful aids to medical practice.

And particularly we think that you should be closely involved in this debate and in these studies and decisions. Otherwise, people with less experience and qualifications may control the purposes, content and use of a tool with considerable promise for improved patient care. It could make a difference in your practice tomorrow, and more importantly, in the health of your patients.



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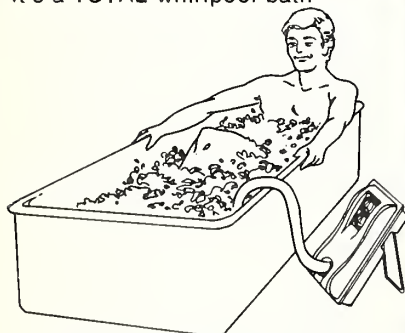
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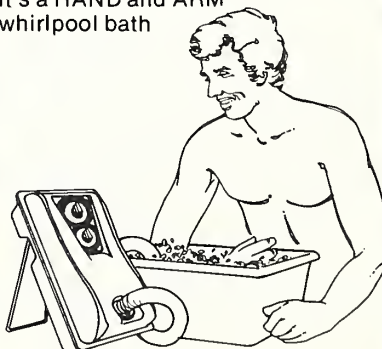
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AGENESIS OF THE DIAPHRAGM AND CHROMOSOME 12p ABNORMALITY

The following is a case report of congenital agenesis of the diaphragm in a family with multiple instances of fetal loss and chromosome abnormalities involving a C chromosome #12 and a B chromosome #4. Although there is no living, mentally retarded, physically deformed individual in the immediate family, the history of high fetal loss is one of the major indications for chromosome studies.

by

Virginia P. Johnson, M.D.*

SUMMARY:

A family with a translocation between the short arms of chromosome 12 and 4 is reported. The possible association of this translocation error and a clinical syndrome including agenesis of the diaphragm is raised to encourage chromosome studies in families that are similarly affected. The importance of chromosome studies in high fetal loss is well demonstrated.

CASE REPORT:

The proband (Fig. 1, IV-2) was born at term following a pregnancy complicated by polyhydramnios. There were no drugs or illnesses during pregnancy. Labor was complicated by mild abruptio placenta. The infant had a few gasps following delivery and soon died. Birth weight was 3 lbs. 13 oz. and length was 18.5 inches. Autopsy showed a well developed thin newborn female with major and minor congenital anomalies. The scalp was normal, fontanelles were large. Facies was unusual with low set ears, flat nasal bridge, short chin and somewhat bulging eyes, the left more than the right. A cleft palate was present. Neck, chest, abdomen and extremities were essentially normal. On opening the chest and abdomen, the major abnormality was absence of the left leaf of the diaphragm with spleen and loops of small and large intestines in the left pleural space. The left lung was markedly collapsed and the right was partially expanded weighing 1.5 g. and 3.1 g. respectively. The heart was normal with foramen ovale closed and ductus arteriosus patent. The major vessels were normal. The thymus

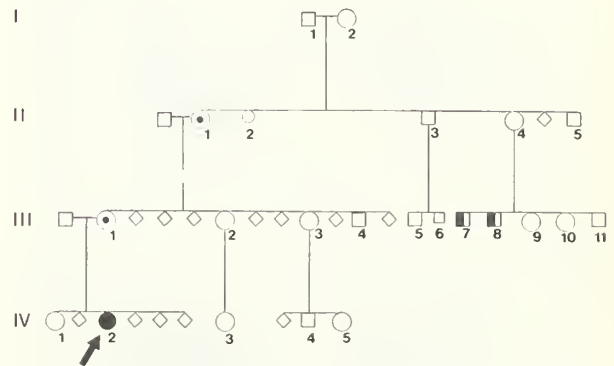


Figure 1

Pedigree. Arrow indicates index case, diamond indicates abortion, center dot indicates translocation carrier state.

was atrophic, largely replaced by adipose tissue. The liver, spleen and gastrointestinal tract were normal apart from displacement in the left pleural space. Urinary tract was normal, internal genitalia was female. The brain weighed 250 g. and showed the usual external configuration and vascular pattern. Multiple sections showed symmetrical ventricles and normal tissue pattern and structural relationships. Because of the facial features suggestive of Mongolism, the parents were referred for genetic counselling.

FAMILY HISTORY:

The mother was 25, the father was 26 at the time of the proband's birth. The parents are unrelated. The pedigree is shown in Figure 1. The sibship consists of a 4 year old normal female (IV-1), a first trimester abortion, the proband (IV-2), 2 abortions at 3 months and a missed abortion at 24 weeks of a 14-16 week fetus. The mother (III-1) is one of 4 children among whom a sister had a first trimester abortion. The maternal

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grandmother (II-1) had 7 abortions (3 first trimester, 3 second trimester at 4, 7 and 6 months, and a tubal pregnancy) interspersed among her 4 children. She had a female sibling (II-2) that died at birth because of a nuchal cord, a brother (II-3) who had a term stillborn, and a sister (II-4) whose first two children (III-7 and 8) died in the neonatal period with the diagnosis of "Mongolism".

DISCUSSION:

Chromosome studies were done on the sister, parents and grandparents. The mother and maternal grandmother were translocation carriers, the others were chromosomally normal. Translocation is between 4p and 12p (Fig. 2). Their karyotype was 46, XX, rcp (4; 12) (p16; p12). Not having had

the opportunity to do fibroblast cultures on the proband, a cause and effect relationship between chromosomal abnormality and the listed congenital anomalies cannot be fully established. An association is suspected because agenesis of the diaphragm is usually an isolated anomaly and the concurrent presence of other congenital anomalies could be taken as an indication of multigenic involvement due to gross chromosomal imbalance. The high incidence of pregnancy loss in the mother (4), grandmother (7), grandmother's brother (1) and sister (2) is also highly suggestive of a chromosomal abnormality as the underlying cause. It is interesting to note that III 7 and 8, the first two children in the sibship, were diagnosed as mongoloid, a diagnosis that was suspected in this case.

As best as can be determined by G-banding studies the reciprocal translocation is between the short arms of chromosomes 4 and 12. The break-point on chromosome 4 is close to the end probably p16 and on chromosome 12 closer to the centromere on p12. Thus trisomic or monosomic states would involve more duplication or deletion of no. 12 chromosome material than no. 4. The results of adjacent and alternate disjunction during meiosis would lead to zygotes with normal chromosomes, balanced translocation, trisomy 12p (also monosomic for small 4p piece), monosomy 12p (also trisomic for small 4p piece). As previously stated, clinical findings could probably be ascribed to trisomy or monosomy of part of 12p because of break-point location involving a bigger piece of 12p and a much smaller terminal piece of 4p.

Six cases of trisomy 12p have been described (1,2,3,5,8,10) and a pattern of malformations seems to be emerging: psychomotor retardation, abnormal facies, hypotonia, simian crease. However, findings from case to case are highly variable. Variability in clinical findings probably depends upon the other chromosome involved in the translocation. Theoretically, there would be monosomy of a small segment of the recipient chromosome. Translocations between 12p and 6, 8, 14, 21 have been described. Monosomic states due to deletions have also been reported (4, 6, 7, 9, and findings have been very variable from phenotypically normal to severely involved.

Although no conclusions can be drawn as to the association of chromosomal abnormality with this case of diaphragmatic agenesis and other congenital anomalies, the possibility of such a relationship needs to be raised to encourage chromosomal studies in similarly afflicted families.

The importance of chromosome studies in families

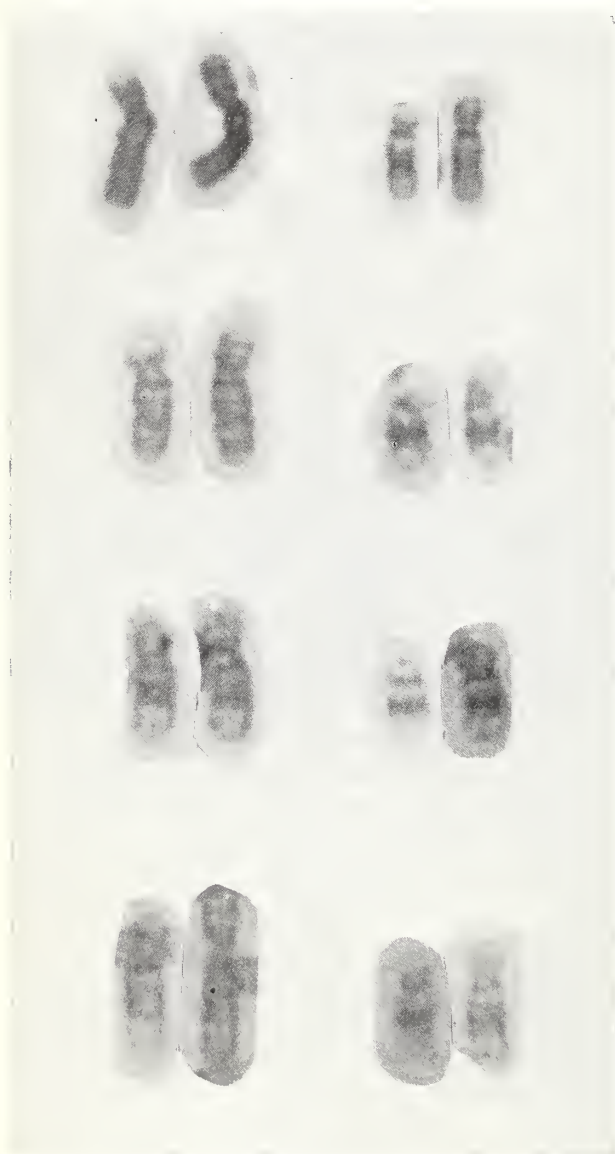


Figure 2

Partial karyotype showing G banded chromosomes no. 4 on the left and no. 12 on the right, the two middle chromosomes being involved in the translocation.

with a high incidence of fetal wastage is well demonstrated in this family. Parents (III-1 and her husband) of the proband were referred by her obstetrician for chromosome studies because of a high incidence of fetal loss. This is one indication of chromosome studies that should be kept in mind by practicing physicians.

Acknowledgement

Author would like to thank Drs. Richard Thornton and John Tidd.

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Salicylates should be used with caution in the presence of peptic ulcer or coagulation abnormalities.

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Special risk patients PERCODAN® should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

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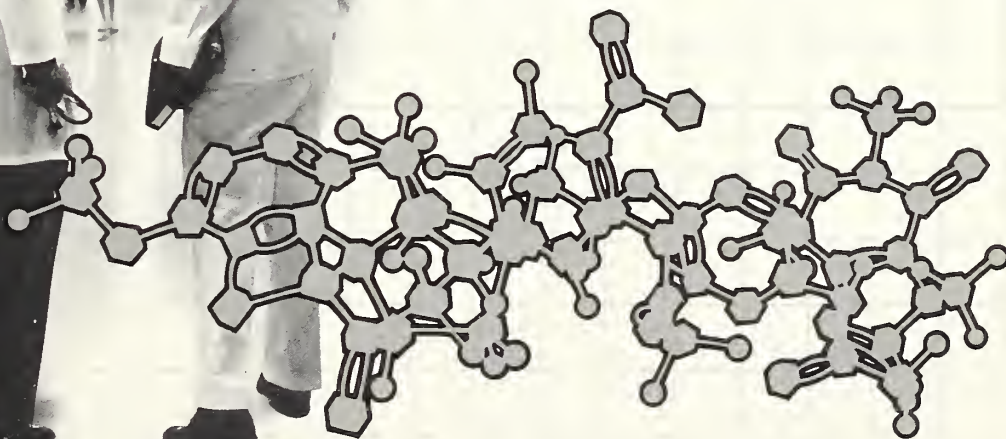
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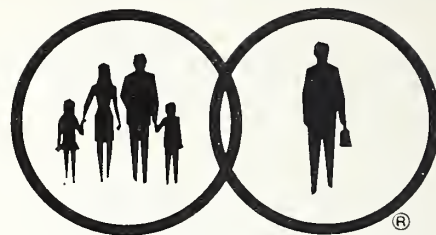
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II



SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105



AAFP OFFICIAL DEFINITIONS OF FAMILY PRACTICE AND FAMILY PHYSICIAN

Family Practice

Family practice is comprehensive medical care with particular emphasis on the family unit, in which the physician's continuing responsibility for health care is not limited by the patient's age or sex nor by a particular organ system or disease entity.

Family practice is the specialty in breadth which builds upon a core of knowledge derived from other disciplines—drawing most heavily on internal medicine, pediatrics, obstetrics and gynecology, surgery and psychiatry—and which establishes a cohesive unit, combining the behavioral sciences with the traditional biological and clinical sciences. The core of knowledge encompassed by the discipline of family practice prepares the family physician for a unique role in patient management, problem solving, counseling and as a personal physician who coordinates total health care delivery.

Family Physician

The family physician provides health care in the discipline of family practice. His training and experience qualify him to practice in the several fields of medicine and surgery.

The family physician is educated and trained to develop and bring to bear in practice unique attitudes and skills which qualify him or her to provide continuing, comprehensive health maintenance and medical care to the entire family regardless of sex, age or type of problem, be it biological, behavioral or social. This physician serves as the patient's or family's advocate in all health-related matters, including the appropriate use of consultants and community resources.

ABFP DIPLOMATES

The following list of SDAFP members were named Diplomates of the ABFP recently, having successfully completed the two day written exam held in testing centers throughout the United States in late October of 1977:

Certified

Walter P. Baas, Mitchell
G. R. Bell, De Smet
Mike Brown, Spearfish
William Dendinger, Vermillion
Marny Kay Eulberg, Hot Springs
Joe Hamm, Rapid City
David B. Harding, Pine Ridge
Irvin I. Kaufman, Freeman
Greg Magnuson, Sioux Falls
Susan M. Ostrowski, Eureka

Jeffrey L. Peterson, Mobridge
Scott R. Phillips, Pine Ridge
Dan R. Sherry, Lead
Bruce Vogt, Sioux Falls

The following SDAFP members achieved recertification of their ABFP Diplomate status after sitting for a one day recertification examination:

L. W. Holland, Chamberlain
R. C. Jahraus, Pierre
B. O. Lindbloom, Pierre
Marvin G. Norris, Hot Springs
E. H. Peters, Sioux Falls
E. A. Schabauer, Mitchell

FAMILY PRACTICE CLUB EVENT

An SDAFP sponsored Family Practice Club event for USDSM students is being planned for Thursday evening, June 8, at the start of the SDSMA Convention meeting in Sioux Falls, according to Chairman Earl Kemp. In addition, a noon luncheon for members attending the convention will be held on Saturday. Particulars in the Meeting Brochure.

BOARD CANDIDATE NOMINATED

The SDAFP nominating committee has placed Herb Saloum of Tyndall on the slate as a candidate for the Board of Directors. The election will be held at the Black Hills Summer Seminar. Further nominations can be made from the floor at the annual business meeting.

BLACK HILLS SUMMER SEMINAR

The dates will be August 10-12, 1978. The location will be the Holiday Inn of the Northern Hills, Spearfish, SD. Watch for a program mailing.

Plan Now To Attend
the
AAFP's Annual Scientific Assembly
September 25-28, 1978
With Special Family Events September 24-27
San Francisco, California

THE FAMILY AS THE OBJECT OF CARE IN FAMILY PRACTICE*

by

John P. Geyman, MD**

Family practice as a specialty is based upon the continuing and comprehensive care of families. Much emphasis has been placed upon care of the "whole person" and the family, but actual practice still reflects a predominant focus on the individual, rather than the family, as the object of care. There is an important conceptual and practical difference between caring for the individual in the context of the family and caring for the family itself as the patient. Both approaches are required for family medicine to realize its potential in the ongoing care of families. This paper outlines some useful concepts and principles which can help to increase the capability of family physicians to deal with the common problems of individuals and their families.

It is axiomatic that the specialty of family practice is involved in the comprehensive, ongoing care of individual patients and their families, and that the knowledge and skills required by the family physician include a broad range of clinical competencies. It is likewise axiomatic that the family is the basic unit of care in family practice, but involved herein is a profound conceptual shift extending well beyond the care of the "whole patient" to the care of the *family*, not just the individual, as the patient. Although this point is part of the everyday language of the developing discipline of family medicine, a gap usually exists between this conceptual goal and actual practice, including teaching practices with intended commitment to this goal.

Family practice residency programs throughout the country have placed varying degrees of emphasis on behavioral science as a curricular approach to this general area. The development of a strong teaching effort in behavioral science, however, does not assure that the family as a unit becomes the object of care. In response to this problem, various writers have wondered where the family is in family practice.¹⁻⁴ As Carmichael says: "To care for the patient in the context of the family is one thing; to turn the family into the object of care is another."⁴

The purpose of this paper is to address this subject as a generic problem, outline some basic concepts relating to the family as the object of care, and suggest some useful principles for family physicians attempting to reorient their practice toward the family as the patient.

Introductory Views of the Family

The family is usually described as a dynamic entity with its own life structure and homeostatic mechanisms. It is not just a group of related people living together, but a system greater than the sum of its parts within which, it is hoped, the emotional and physical needs of its members are provided.

Olsen has made the following observations of family organizations:⁵

The family organization is obviously influenced by the parents' previous family experience and the culture in which the family exists, but within the family the members occupy and function in roles in relationship to one another (father-husband, daughter-sister, etc.). They seem to function in these roles according to the expectations of the whole family, and the action of any member affects all, producing reaction, counterreaction, and shifts in family equilibrium.

And further,

Families are highly organized and have developed homeostatic mechanisms for the maintenance of a tolerable stability, while at the same time satisfaction of the emotional and physical needs of the members is provided.

The family can be defined most broadly as the intimate enduring social relations in which a person is incorporated and "brought up." The family is a genetic unit in both biological and psychological terms. It is the matrix of personality development and is the most intense emotional unit in society. Each family is unique and different, and there is an increasing rate of change and variation among families in this country.

Various definitions are commonly used to de-

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scribe major types of families. Ransom and Vandervoort have defined the family as "a significant group of intimates, with a history and future."³ Smilkstein has defined the family as "adult partners, with or without children, and single parents with children. These people function in a setting where there is a sense of home and they have an agreement to establish nurturing relationships."⁶ Although others have suggested variations of these definitions, we can pursue the basic issues without full agreement on a single definition.

The fact that we live in a complex and changing culture characterized by rapid technological, social, and cultural changes challenges homeostatic interrelationships within the family. Continuous shifts are being seen in religious, cultural, and sexual values. An individual in a changing society will encounter a large number of identity crises in his/her lifetime than in previous generations. At the same time a wider variety of family types are in evidence than in previous years as a result of increasing interest in alternative life-styles. An important example is the increasing number of single-parent families.

Curry takes this one step further to a view of the family as a basic unit of humanity:¹

An illness has far greater ramifications that just the perception of discomfort by the person who is dis-eased. There are those to whom he has a responsibility—he fears that he may fail them. There are those who look to him for support—they feel fear and insecurity and they are dis-eased along with him. Further plans which involve others are clouded over with doubt. This man or whole person is now a human being because of all the relationships he has about him, all the feelings that exist between others and himself, especially with members of the nuclear family, the simple family, the extended family, and even the community. It is, in the last analysis, our relationships with others which make our lives happy and meaningful, which give us our humanity.

Some Basic Concepts

In exploring the role of the family as a basic unit of health care, it is useful to consider some basic concepts.

The Family as a Viable and Continuing Unit in Society

Though American society and family structures are admittedly undergoing many changes, there is strong evidence that the family is here to stay. There are proportionately more married people in the United States now than at any time in the

history of reliable census data.⁷ When divorce occurs, there is a tendency toward remarriage. Moreover, as reflected by such statistics as suicide rates, it has been amply demonstrated that family life is more conducive to satisfactory living adjustments than is the unmarried state.

Further, in Curry's words,

The family is the oldest recorded institution of man; it preceded even the church and state. Every recorded civilization had a nuclear family as its foundation.² . . . Through the ages the family has served the purpose of procreation, continuation of the species, and socialization of the young. As children grew up they were oriented to the world through their family relationships. They first experienced love, care, and had their needs met, realized sex differences, learned to work, learned to relate to members of an extended family, the community, and a wider circle of people through the family. After they were so oriented they matured, found a mate, and started the cycle all over again, all to be repeated thousands of times in the history of mankind.¹

The Family as an Evolving Unit

Toffler has stressed the problem of the impact of an increasing rate of change within this society and its impact upon individuals and families.⁸ People in this country live in a nonrepetitive context (ie, parents or occupational predecessors can no longer serve as valid models from which to learn how to cope with the particular stresses in the future).

All families change over time. Most families are subject to greater or lesser degrees of disorganization during their histories, and in this culture, families tend to have a beginning and an end. Worby proposes the concept of a family life cycle, during which a number of distinct sequential phases occur. Within each of these phases a number of phase-specific tasks can be delineated; "These tasks arouse considerable stress within the family system and require of all family members a continuous mutual and reciprocal set of readjustments."⁹

Family Life Cycles with Predictable Crises

There are five basic developmental phases for every elementary family.

1. *Birth of family.* Elementary family originates with marriage of couple.

2. *Phase of expansion.* Begins with birth of first child and continues until the youngest child reaches adulthood. This phase includes the period of fertility, the period of physical and social maturation of children.

3. *Phase of dispersion.* Begins when the first child achieves adult status and continues until all children have grown and left home.

4. *Phase of independence.* Begins when all children have reached adulthood and left home so that the parents again live alone.

5. *Phase of replacement.* Begins when the parents retire from their major life roles and ends with their death. Usually includes a dependency stage of variable length.

The life cycle of the family is one of constant change as its individuals grow and develop and as their roles and interrelationships within the family change. Each major event for an individual may create a "crisis" for the family, which is constantly reorganizing in response to multiple crises during each phase of family development. Examples of such crises include childbirth, adolescence, occupational change, major illness, disability, and death.

The basic structure shown in Table 1 serves as a useful framework to facilitate understanding of behavioral problems within families, and can further serve as an aid in predicting possible future behavioral problems at later stages of the family's life cycle.

Table 1. Examples of Major Crises

Stage	"Normal" Crises	Clinical Problems
Birth of family	Early sexual adjustment	Sexual problems
Expansion of family		
Early (Preschool)	Birth of child	Postpartum depression
Middle (School)	Separation anxiety	Hyperactive child
Late (Adolescence)	"Empty nest" syndrome Teenage identity crisis	Last fling Juvenile delinquency
Dispersion	Career stagnation	Depression
Independence	Menopause Marital readjustment Death of parents	Depression Alcoholism
Replacement	Physical disability Retirement Death of mate Loneliness	Organic brain syndrome Depression Suicide

Such a conceptual framework can be useful to the family physician in everyday practice by increasing his/her awareness of potential future crises in the individual patient and his/her family. It is

well known that individuals with certain stress problems have a greater likelihood of developing other problems as a result of future crises. Thus, the physician caring for an obstetric patient with postpartum depression would observe her more closely five years later for signs of separation anxiety. This framework also illustrates that two or more individual "crises" may be concurrent at any given time in a family's development; for example, depression and an "empty nest syndrome" in a 45-year-old wife and mother may coexist with a teenage identity crisis in her 18-year-old son and youngest child.

As a result of his work with a *social readjustment rating scale*, Holmes has concluded that generalizations can be made about the relative stress on family life caused by various life crises. For example, "normative" crises, such as marriage, pregnancy, and retirement, are especially stressful, while divorce, separation, and death are the most stressful among "non-normative" crises.¹⁰

Reorganization of the Family Around Critical Events

It is now well recognized that a critical event, such as major illness in an individual family member, often precipitates crisis within the family with resultant disequilibrium and need for reorganization. Previous roles and rules of intrafamily relationships frequently fail to maintain satisfactory family organization when a family member is in the hospital, in danger of dying, disabled, or making new demands on the family.

A family's reaction to crisis has been divided by Hill into three basic phases: (1) initial period of stunned denial; (2) period of confusion, anxiety, and frequently resentment toward the sick family member; and (3) period of recovery and reorganization.¹¹ The phase of reorganization is perhaps the most unpredictable and potentially disruptive of all. While the reorganized family may function as well as or better than before the crisis, the result can often be serious emotional pain or functional disability in one or more family members other than the one who is ill. New relationships between family members will have evolved which the physician should understand. In addition to the possible need for treatment of other members of the family, he/she may find the recovery or rehabilitation of his/her patient may be unfavorably affected by family reorganization. This underscores the importance of considering the entire family when treating an individual patient with a serious disease or disability.

Family Dynamics as Cause of Illness Behavior

The social interactions of a person who is sick or who thinks he/she is sick can be described as

"illness behavior." Such behavior may be appropriate or inappropriate according to the circumstances. Examples of inappropriate illness behavior could take the form of an individual with severe and apparent organic disease refusing to assume the sick role, as well as the other side of the issue whereby an individual without organic disease may acquire a sick role.

Bursten describes this example of the role of family dynamics in affecting illness behavior which involves inappropriate hospitalization of a patient.¹²

We have studied the family of a patient who had a long-standing, mild, chronic bronchitis due to smoking. He had been a mild-mannered husband until his brother had shown a high degree of self-assertiveness in changing his job. Encouraged by his brother's success, the patient became more self-assertive in his own family. This assertiveness threatened his wife who "put him in his place" by worrying about his chronic cough. The wife suggested that he go to the hospital for an intensive examination. Feeling defeated by his wife's refusal to allow him his self-assertion, the patient complied. Thus, a family conflict was resolved by the shift in the patient's role from an assertive husband to a sick and compliant patient.

Peachey has studied the incidence of illness in 25 families of a rural family practice. She had demonstrated four basic patterns of illness—constant illness, regular periodicity, clustering, and simultaneity, and suggests that such patterns may hold predictive value.¹³ It is therefore important to remember that the sick role may be adopted in an attempt to resolve an actual or potential family crisis, and that the family may at times demand that a family member assume this role.

Frequent Association of Organic and Functional Problems

Numerous studies have demonstrated the widespread occurrence of functional disorders in the practices of all physicians regardless of their specialty. For example, in one study of 141 randomly selected family physicians in Washington State, 71 percent of the physicians reported between 20 and 30 percent of their patients had "significant mental, psychological, or emotional impairment of some sort."¹⁴ Over one half of these patients presented with a "physical" complaint, but were found to have associated emotional or "psychiatric" problems. All too often, the physician manages organic problems more effectively than the functional elements, which frequently jeopardizes the patient's rehabilitation from the disease state.

Some Useful Principles

It is now pertinent to outline several principles especially useful to family physicians. A useful perspective on emotional illness has been put forth by Ganz:¹⁵

In my practice, I see very little imagined illness. But I see lots of physical illness the cause of which lies in the environment, the personality, or the emotional makeup of the patient. To my way of thinking, "stress illness" communicates a more acceptable and certainly more proper image to patients. It also indicates to the doctor a truer etiology.

Features Can Be Identified Which Are Found in Healthy Families Adapting Well to Stress and Change

Olsen has suggested these features:⁵

1. There is a clear separation of the generations so that the parents are satisfying each other's emotional needs or, in case of conflict, are able to fight straight.

2. There is a flexibility within and between roles so that shifting can be tolerated with relative comfort.

3. There is a tolerance for individuation. The family can accept and enjoy differences and can tolerate the anxiety of disequilibrium in the system as the members grow and change.

4. Communications among the family members are direct and consistent and tend to confirm the self-esteem of each.

A Request for Medical Help May Reflect an Attempt to Resolve a Family Crisis, Not an Individual Patient's Problem

It is well recognized that the person presenting with an illness frequently represents the symptom-carrier for the whole family, thereby acting as a signal that the entire family relationship is in distress.^{2,16,17} All practicing physicians, particularly those involved in primary care, can recall many patients who presented with a chief complaint which was not the real reason for seeking care but a kind of "ticket" which was felt by the patient to be "legitimate" in medical terms. It takes a perceptive physician to uncover the real problem in these situations, and in many instances it is related to causative or associated family conflicts. In addition, even when the patient's complaints are valid and undisguised, there may be forces within the family which favor the patient's continued sick role and failure to respond to medical management. The physician must therefore involve other members of the family in the care of such individual patients, and it holds a considerable advantage if he/she takes care of the family as a unit.

Critical Events or Crises in Families are Nodal Points Where Further Reorganization of the Family can be Constructively Altered

Studies on crisis intervention have demonstrated that the family in crisis is less resistant to change than it is under ordinary circumstances.¹⁸ Family therapy usually seeks to shift the equilibrium of the troubled family to a more favorable milieu. Therefore, the physician taking care of the family in crisis has a unique opportunity to deal constructively with the family as a unit as well as with the individual family member. In order to do so, he/she must have a basic understanding of the family's dynamics, remain objective and nonjudgmental, avoid siding with one family member against others, and facilitate a process of improved communication and understanding within the family.

The Physician Must Learn to Think in Terms of the Family as His/Her Patient if He/She is to be Effective in Managing Illness in Individual Patients

This is simple to say but remarkably difficult to practice. All physicians have been conditioned by traditional medical education to focus predominantly on the sick patient, and the first priority is always the diagnosis and therapy of the individual's clinical problems. The pressures and time constraints of a busy practice may present further barriers to taking the broader view. But, in many instances, it is this next step—seeing the family as a unit as the patient—which is required for intervention to be effective. Indeed, the wholeness of the individual patient cannot be fully appreciated by the physician without some understanding of his/her family.

In Major Illness of Individual Patients, the Family Also Has the Illness

Just as disorders in the family unit can precipitate illness in individual family members, so can major illness in the individual lead to illness of the family itself. The family is thrown into disequilibrium, acute illness or exacerbations of chronic illness may be precipitated in other family members, and the family will attempt to shift toward a new homeostasis which will be more tolerable. Serious emotional problems or impairment of functional ability may occur in other family members which will call for further intervention beyond the care of the individual patient with the initial illness.

Continuing Efforts are Required to Integrate Behavioral Science with Clinical Medicine

McWhinney suggests that the common failure by physicians to integrate behavioral science with clinical medicine is due to a lack of a schema for classifying patient behavior. He has proposed taxonomies for patient behavior and social factors in illness

which can facilitate the physician's attempts to deal with behavioral issues concurrently with organic medical problems.¹⁹

A common example of a clinical problem requiring a comprehensive approach is the patient presenting with fatigue. Rockwell and Burr have described an excellent integrative approach to the diagnosis and care of the tired patient which addresses both organic and functional causes.²⁰

The Resources of the Family can Often be Effectively Mobilized to Assist in the care of the Sick Individual

The potential resources of the family are frequently not appreciated or used by the physician in caring for the sick family member. Based upon the preceding interrelationships which have been described within families, it appears clear that the perceptive and skilled physician can often utilize the efforts of other family members in facilitating the recovery of sick individuals.

Comment

The state of the art is constantly improving concerning the potential of the practicing family physician to apply the concepts and principles which have been outlined. Smilkstein has described a family problem-oriented medical record which can facilitate the assessment of levels of family function and dysfunction in terms of five parameters: commitment, adaptation, mutuality, differentiation, and intimacy.⁶ Grace, Neal, Wellock, and Pile have described a family-oriented medical record which has been useful in everyday practice.²¹ Liebman, Silbergleit, and Farber have reported on the value of the family conference in the care of the patient with cancer.²² Hoebel has found that brief family-interactional therapy is effective in the management of cardiac-related high-risk behaviors.²³

The family physician's close relationship to a large number of families in his/her practice over a period of many years provides him/her an excellent opportunity to reduce the effects of stress illness among families. In order to provide appropriate care to individuals and their families, the family physician should have a broad understanding of the family life cycle, its attendant crises and stresses, and its behavioral problems. Such an understanding will improve his/her ability to view the family as an evolving unit, to anticipate (and possibly prevent) future problems among members of the family, and to better recognize and manage both organic and behavioral problems as they occur. Essential to this goal, however, is the physician's everyday perception of the family, not just the individual, as the patient and object of care.

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January and February are months which, while still busy, seem to be filled with an emptiness which some may identify as sadness, melancholy, or even depression. In fact I think the lyricist who wrote the lines of "September Song" must have even found this period too threatening to mention. I hope you doctors found a little something to do in January and February which didn't cost a lot of money and gave your stressed life the needed diversion. And don't be sad about these two months for as you become older they go faster and faster!

January and February's Song

Deep Purple

My heart is heavy laden for
Reasons my mind can not see
A penalty for past triumphs
Draws me into deep reverie.

To what new aspiration
Can I turn
To quell Deep despiration
To sadness spurn?

The answer is the question
Hidden in the breast of love
How to feel without **being**
How to **be** without love.

W. ODLAND
TO H. L.

An error of omission: The poem "Lives and Paper" was the poem dedicated to R. G. Gere a long time dear friend and sharer of many lasting memories of past experiences at the University of South Dakota School of Medicine. Dick, Marge and I and the rest of the "Butt Hut" society fed on each others misery in poverty to develop a remembrance of those days as some of the best. We shared what we had and sometimes that was not enough to get us back from Yankton. To quote the Irish poet, author and otolaryngologist, from his book "It isn't this time of year at all"

Oliver St. John Gogarty

"Oh boys the times I've seen!
The things I've done and known!
If you knew where I have been
Or have the joys I've had
You never would leave me alone"

Oliver St. John Gogarty
"Oh Boys Oh Boys"

Just for a diversion from these wanning days of winter's angled glow, think about last August and early September in the country, watching the doves grouping for their migration. When I saw it once I made an observation about three doves.

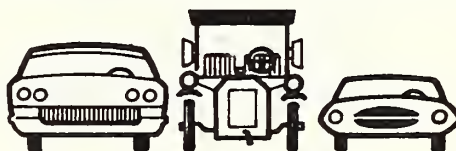
Doves

Three doves
Two in love
And one
For lack of
Fly together.

W. Odland August 1975

Being together answers alot of the requirements of life—stay together!

Next month some things about spring, mountains, calving, etc.



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**Current Progress in
Obstetrics and Gynecology
Lecture #5—Endocrine
Assessment of High Risk
Pregnancies**

*Loren P. Petersen, M.D.
N. Kundu, Ph.D.*

**Clinicopathological Conference
Nineteen Year Old Known Hemophiliac
Who Underwent Knee Surgery**

*John F. Barlow, M.D.
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tact: Off. of Postgrad. Med. Ed.,
U. of Colo. School of Medicine,
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**Physicians and Their Families: An Ex-
perience in Communication**, The
Menninger Foundation, YMCA of
the Rockies, Estes Park, CO, June
18-23. 25 hrs. AMA Category I and
prescribed AAFP credits. Fee: \$325.

Contact: Mrs. June Housholder,
Div. of CME, The Menninger
Foundation, P. O. Box 829, Topeka,
KS 66601.

**Advances in the Management of Long
Term Diseases of Children**, Black
Hills Seminar, Rapid City Regional
Nursing School, Rapid City, SD,
June 21-23. Contact: Off. of CME,
800 E. 21st St., Sioux Falls, SD
57105.

**Cardiac Symptoms and Arrhythmias
—Their Diagnosis and Treatment**,
The Regency, Denver, CO, June 23-
25. Fee: \$195. 13 hrs. AMA &
AAFP credits. Contact: Internat'l
Med. Edu. Corp., 64 Inverness Dr.,
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**Orthopedics and Physical Fitness for
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Institute of Pathobiology, Aspen,
CO, June 24-28. Fee: \$165. Con-
tact: CME, U. of Colorado School
of Medicine, 4200 E. Ninth Ave.,
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July

**Practical Neurology for the Internist
and Family Physician**, The Given
Institute of Pathobiology, Aspen,
CO, July 2-5. Fee: \$150. Contact:

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**Disorders of Fluid and Electrolyte
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Current Progress in Obstetrics and Gynecology

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Lecture #5

ENDOCRINE ASSESSMENT OF HIGH RISK PREGNANCIES

by

Loren P. Petersen, M.D.*

N. Kundu, Ph.D.**

The recognition of intrauterine fetal distress is of paramount importance in the practice of obstetrics. Endocrine assessment of the complex maternal-fetal-placental unit is one approach to early recognition of fetal distress.

This article will review the biosynthesis of estrogens (primarily estriol) by the fetal adrenal, fetal liver, placenta and maternal liver, the conditions affecting estriol biosynthesis, normal estrogen values in pregnancy, interpretation of estrogen levels during pregnancy, and the clinical indications for estriol and HPL monitoring of high risk pregnancies.

Figure 1 gives an abbreviated outline of the **major** pathway for the biosynthesis of estriol in the maternal-fetal-placental unit. Knowledge of the biosynthetic pathway and of the conditions affecting estriol biosynthesis are essential for proper management of high risk pregnancies.

FETAL ADRENAL IN ESTRIOL BIOSYNTHESIS

The fetal adrenal glands in the term newborn have a combined weight of over 100 grams. On a proportionate weight basis, they are 10-20 times larger than the adult adrenals. The "fetal zone" or central zone comprises 80 percent of the gland volume. Steroidogenic activity occurs in the fetal zone at 49-56 days, while the permanent zone does not show histologic evidence of steroidogenesis until late in the second trimester.¹

Synthesis of dehydroepiandrosterone (DHA) occurs in the "fetal zone" by the conversion of placental derived pregnenolone. Pregnenolone is sulfated by the active fetal sulfokinase enzymatic system, 17 α hydroxylated, and converted to DHA sulfate conjugate (DHA-S). DHA-S is the key fetal adrenal derived precursor to placental estrogen production.²

Any condition affecting fetal adrenal synthesis of DHA-S will thus alter maternal estrogen production and excretion. For example, maternal steroid therapy given to enhance fetal lung maturity will dramatically reduce serum and urinary estrogen levels, presumably by inhibiting fetal ACTH release, and thus decreasing fetal adrenal DHA-S production. The fetus with anencephaly, adrenal hypoplasia, or intrauterine growth retardation has a relative hypoplastic "fetal zone" of the fetal adrenal, and maternal estrogen levels will also be decreased.³ Thus, in pregnant patients with very low serum or urinary estrogens, anencephaly must be ruled out with ultrasound or x-ray, a careful history taken to exclude maternal steroid therapy, and the infant observed for signs of adrenal hypoplasia. In patients with congenital adrenal hyperplasia (CAH), maternal estrogen levels may be increased.

FETAL LIVER IN ESTRIOL BIOSYNTHESIS

DHA-S produced in the fetal adrenal may be 16 α hydroxylated in the fetal adrenal or fetal liver. 16 α hydroxylation is most active in fetal liver, and is a prominent metabolic degradation step for both $\Delta 5$ - 3 β hydroxysteroids (DHA) and estrogens. Thus, fetal liver 16 α hydroxylation of DHA-S gives 16 α hydroxy DHA an intermediate precursor of estriol, and 16 α hydroxylation of estradiol gives

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PLACENTAL ROLE IN ESTRIOL BIOSYNTHESIS

The placenta serves three major roles in estriol biosynthesis. First, maternal cholesterol is converted by the placenta to progesterone and pregnenolone. Pregnenolone is the precursor for fetal adrenal synthesis of DHA-S. The second function of the placenta in estriol biosynthesis is hydrolysis of the sulfurylated 16α OH-DHA-S by the placental sulfatase enzymes, and the last function is the conversion of androgens to estrogens by aromatase. The unconjugated free estriol enters the maternal circulation and is conjugated in the maternal liver as the sulfate and/or glucuronide.

In placental sulfatase deficiency, hydrolysis of the sulfurylated 16α -OH-DHA-S and DHA-S does not occur; therefore, placental conversion to estriol is prevented, and results in very low maternal estriol levels.⁶ In patients with very low estriol levels and a normal fetus, placental sulfatase deficiency should be considered when all other factors affecting estriol biosynthesis have been excluded.

MATERNAL ROLE IN ESTRIOL BIOSYNTHESIS

The maternal liver and kidneys both play a major role in estriol biosynthesis. The maternal liver conjugates the unconjugated estriol as the sulfate or glucuronide. The estriol conjugates are then cleared by the kidneys, and excreted in the maternal urine. If there is compromised renal function with decreased glomerular filtration, false low urine estriol levels may be obtained. Further, with bed rest, urinary estrogen excretion may be increased secondary to maternal diuresis.

Maternal antibiotic therapy (Ampicillin and Neomycin) has also been shown to decrease urinary and serum conjugated estriol levels, but not unconjugated serum estriol in all cases.⁷ The mechanism suggested for Ampicillin induced decreased estriol conjugates is that Ampicillin, by reducing the intestinal bacterial flora, inhibits steroid conjugate hydrolysis in the gut and causes fecal loss of the steroid.⁸

In assessing fetal status with estriol determinations, maternal renal function, liver disease, and antibiotic therapy must be carefully considered in making judgment decisions regarding delivery of a supposedly distressed fetus.

NORMAL ESTROGEN VALUES IN PREGNANCY

Approximately 90 percent of the maternal urinary estriol is derived from the fetal precursors as outlined in Figure 1. All of the urinary estrogens are conjugated and estriol accounts for 78 percent of the total urinary estrogens. Normal urinary levels from

the 36th week to term for estrone, estradiol, and estriol were first reported by Brown et. al. and were as follows:⁹

	Mean Value (Mg/24 hrs.)	Range of Values (Mg/24 hrs.)
Estrone	1.4	0.7 - 2.1
Estradiol	0.5	0.3 - 0.9
Estriol	29.1	16-41

Similar results have been reported by numerous other investigators.^{10,11,12}

Concentrations of various estrogens in late pregnancy in the free and conjugated form in the maternal plasma have been reported as follows:

	Unconjugated (ng/ml)	Conjugated (ng/ml)
Estriol ¹³	7	124
Estrone ¹³	11	79
Estradiol ¹³ (17 β)	19	4.8
Estetrol ¹⁴	0.25-0.95	—

The choice of which estrogen or estrogens to measure depends on laboratory capabilities, patient compliance, expense, etc. In general, estetrol has the greatest theoretical advantage, because it is solely a fetal product, and has no circadian rhythm.¹⁵ Whichever estrogen is being measured (unconjugated or conjugated estrone, estradiol, estriol, or estetrol, urinary or serum, individual or total), normal values for that laboratory must be established and fetal outcome reported.

INTERPRETATION OF ESTROGEN LEVELS DURING PREGNANCY

The interpretation of estrogen levels in complicated pregnancies is not easy. Besides having a knowledge of estriol biosynthesis and the conditions affecting estriol production and excretion, the following must be considered in every patient:

1. Serial determinations are necessary—single values are useless. The patient should be evaluated according to her own daily serum or urinary excretion pattern, as well as whether or not these are within normal limits. For example, a patient with high estriol values which are rapidly decreasing indicates fetal distress in spite of "normal" values.
2. Maternal drug therapy must be known. Antibiotics, urinary antiseptics (Mandelamine), steroids, and laxatives all can affect estrogen values.
3. Gestational age must be known.

4. With urinary estrogens, adequacy of urine collection and maternal renal function must be known. In addition, glucosuria can affect urinary estrogen determination.
5. Fetal size should be considered. Estriol levels correlate with fetal weight.¹⁶ Thus, a serum estriol value of 6 ng/ml in a pregnant diabetic patient of 35 weeks gestation with a fetus estimated at 9 pounds would be far more ominous than a pregnant toxemic patient with a 3 pound IUGR fetus of the same gestational age.
6. Daily fluctuations in estriol excretion can be as much as $\pm 40\%$ ¹⁷ and circadian rhythms occur with unconjugated serum estriol. At least three values are necessary to establish a trend. Each laboratory measuring estriols must collect data on gestational age and fetal deaths and report the deaths along with normal values to the physician using estriol data. Variations in laboratory techniques and methods require that **each laboratory develop its own normal values and report fetal outcome.**

INDICATIONS FOR ESTRIOLE AND HPL DETERMINATIONS IN HIGH RISK PREGNANCIES

Human placental lactogen (HPL) levels in the fetal danger zone (after 30 weeks gestation ($<4 \mu\text{g/ml}$) are helpful in identifying infants in difficulty from hypertensive complications of pregnancy, post maturity, and idiopathic placental insufficiency with associated intrauterine growth retardation.¹⁸ Serial HPL samples are of little value in managing patients with chronic fetal distress.

Estriol determinations have proven helpful for fetal assessment in a variety of clinical conditions such as diabetes, toxemia, third trimester bleeding, Rh disease, and post dates. In addition, patients with low estriol values have a much higher incidence (ten-fold) of fetal mortality during labor.¹⁹

DIABETES MELLITUS

In diabetic pregnancies, estriol determinations are begun weekly from 26-30 weeks gestation, three times weekly from 30-34 weeks gestation, and daily thereafter. Any time complications arise such as toxemia, hydramnios, infection, acidosis, etc., daily estriol determinations are required. Fetal death can occur within one or two days in diabetic pregnancies. In diabetic patients with normal estriol curves and negative oxytocin stress testing, the fetus need not be delivered until fetal lung maturity is assured, for example, as seen in Figure 2:

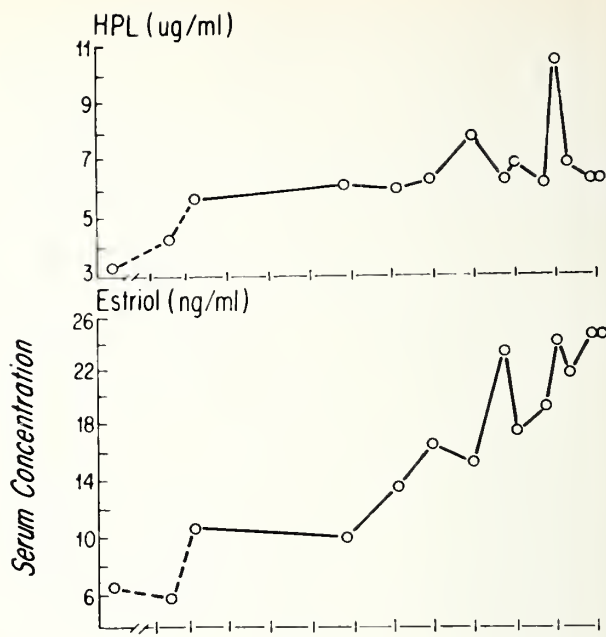


Figure 2

Diabetic with normal estriol HPL levels.

GESTATIONAL HYPERTENSION

In pregnancies complicated by renal disease with hypertension, essential hypertension, or preeclampsia, serial estriol values are of major importance for timing of delivery and recognition of fetal distress. In patients with normal estriol values and/or increasing low values and **no maternal** indication for delivery, the pregnancy can be allowed to continue until fetal lung maturity is assured by a mature L/S ratio. A serial decreasing level of estriol or 50% drop is an indication for OCT, amniocentesis (L/S), and consideration for delivery. A rapidly decreasing estriol as seen in Figure 3 is an indication for delivery, regardless of an immature L/S ratio. Pregnancies with toxemia frequently are complicated by intrauterine growth retardation (IUGR). Not all of these infants will be recognized by subnormal estriol values, low ($<4 \mu\text{g/ml}$) HPL values, or ultrasound. However, with both low serum HPL levels and low maternal total estrogen excretion, significant fetal growth retardation is present in 95 percent of cases. These pregnancies represent serious obstetrical problems, as IUGR is a frequent cause of mental retardation. Infants of toxemic pregnancies with prolonged subnormal estriol excretion have a high incidence (one-third) of permanent neurological sequelae. All patients with gestational hypertension should be hospitalized, and closely monitored with serial estriol levels. Daily estriol determinations are necessary in patients with low or decreasing values.

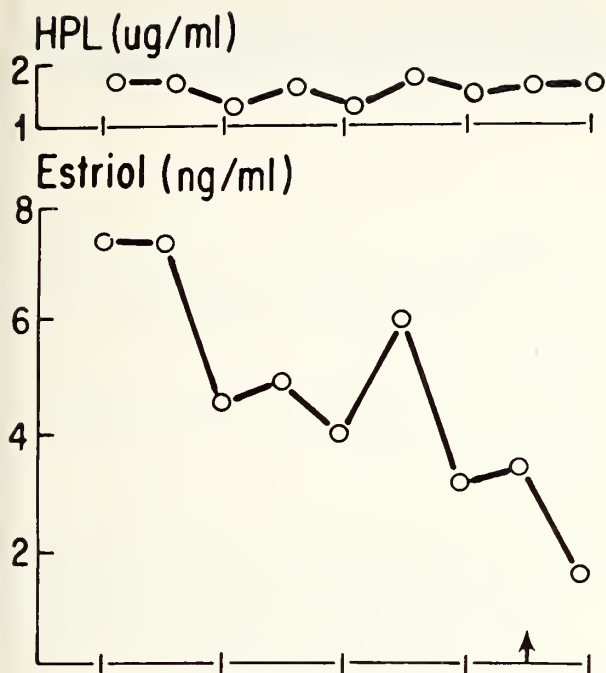


Figure 3

Rapidly decreasing estriol values, low HPL levels. IUGR fetus with intrauterine death at arrow.

POST DATES (POST MATURITY SYNDROME)

The incidence of post maturity syndrome in post dates pregnancy is 7 percent. Pregnancies going past 42 weeks gestation should have estriol determinations three times weekly. In addition, serum HPL levels are significantly lower in post dates pregnancies, bearing dysmature infants. Management of post dates pregnancy is determined by serial estriol, HPL, and OCT.

THIRD TRIMESTER BLEEDING

Estriol values are usually normal in placenta previa, and of little value in placental abruption because of need for rapid information. In undiagnosed third trimester bleeding, as many as one-third of pregnancies may be complicated by low estriol values; therefore, patients with third trimester bleeding should have estriol values determined to rule out **unsuspected** fetal distress.

HEMOLYTIC DISEASE

In pregnancies complicated by rhesus immunization and normal estriol values, the perinatal mortality was 7-10 percent. Therefore, normal values did not accurately predict fetal distress. However, in patients with low estriol values, the perinatal mortality was 65 percent.

CONCLUSION

Endocrine assessment of the fetus and placenta is helpful in managing high risk pregnancies such as

diabetes, toxemia, Rh disease, third trimester bleeding, post dates, suspected IUGR, and predicting fetal distress in labor. The clinical value of serial estriol determination is clearly established. Endocrine fetal evaluation is indicated in all high risk pregnancies and may eventually prove of value for routine screening of all pregnancies. Plasma unconjugated estriol may prove the best method of fetal assessment.

For critical obstetrical judgment, no single laboratory test or biophysical technique has proven completely effective in preventing fetal deaths. When following high risk pregnancies, serial estriols, single HPL determinations, weekly OCT, amniocentesis, and ultrasound are all necessary to reach difficult obstetrical judgment delivery decisions. **Expense is not an issue.** In many intensive care nurseries, the cost has reached over one thousand dollars per day. Every effort must be made to prevent prematurity and to deliver a healthy newborn.

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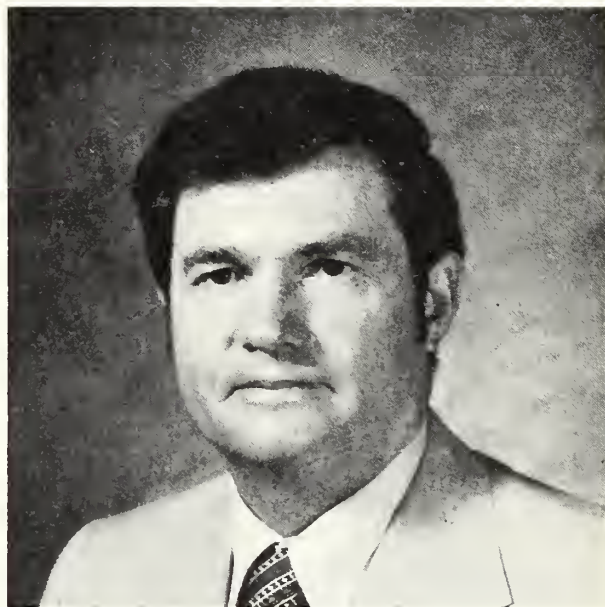
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4. Absence of potassium, citrate, ammonia and acid from the anticoagulant—these are undesirable in patients with chronic renal, hepatic, or cardiac disease.
5. Absence of microaggregates—this has been implicated as a cause of pulmonary insufficiency in massive transfusion.
6. Possible decreased incidence of hepatitis.

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2. Prolonged storage of blood lacking in antigens to common irregular antibodies—allows blood to be available when compatible blood may be difficult to find.
3. Maintenance of normal oxygen carrying capacity of blood because of preservation of optimal 2,3 DPG levels.
4. Possible wider application of autologous transfusion.

John F. Barlow, M.D., Pathologist

President's Page



I want to thank the South Dakota State Medical Association for allowing me to be president. As president it has given me an opportunity to see our Association from many different views. I can assure you that the staff in the South Dakota Medical Association office is highly dedicated, skilled, and very pleasant to work with, and the amount of work put out for our Association is tremendous.

In the next few years, the Medical Association will have to assume strong positions on policy and direction for health care delivery. The Medical Association is in an excellent position to respond to the needs of our state. Over seventy doctors faithfully attended the meetings of the Health Systems Agency to develop plans for South Dakota. In addition, attendance at the Commission and Council meetings were excellent. All districts should give special appreciation to the members who represented them. I would like to encourage all physicians to participate in the activities of the Boards of Trustees of their local hospitals. The Association has officially gone on record suggesting to the Hospital Association that physicians be given the opportunity to serve on these Boards.

The number of doctors belonging to SoDaPAC is at an all time high. We must increase our activity in the political process of our state. To do this we must seek and encourage good candidates to run for office and help them obtain voter support. It is important for all physicians and their families to support local candidates for the state House and Senate members who have a concern for quality health care. The national scene also demands our attentions to the United States Congressional and Senate races.

Russ Harris, president elect, will be overwhelmed by the number of people throughout the state he can call upon to help guide our Association. My knowledge of the interest of those doctors in the Association who help whenever and wherever they can, will give Russ Harris many happy days. I certainly had my share, thanks to all of you.

I hope that when you see your patients who honor you with their trust, you will give them a big smile and say "Have A Happy Day."



Have a happy day!

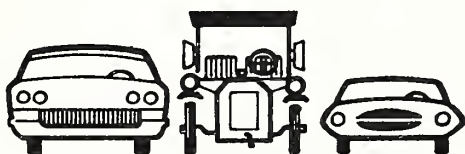
Fraternally,
James Ryan, M.D., President
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CONTRAINDICATIONS Hypersensitivity to oxycodone or acetaminophen.

WARNINGS **Drug Dependence** Oxycodone can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence and tolerance may develop upon repeated administration of PERCOCET®-5, and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral narcotic-containing medications. Like other narcotic-containing medications, PERCOCET®-5 is subject to the Federal Controlled Substances Act.

Usage in ambulatory patients Oxycodone may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using PERCOCET®-5 should be cautioned accordingly.

Interaction with other central nervous system depressants Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics or other CNS depressants (including alcohol) concomitantly with PERCOCET®-5 may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

Usage in pregnancy Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, PERCOCET®-5 should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

Usage in children PERCOCET®-5 should not be administered to children.

PRECAUTIONS **Head injury and increased intracranial pressure** The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute abdominal conditions The administration of PERCOCET®-5 or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

Special risk patients PERCOCET®-5 should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

ADVERSE REACTIONS The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients, and some of these adverse reactions may be alleviated if the patient lies down.

Other adverse reactions include euphoria, dysphoria, constipation, skin rash and pruritus.

DOSAGE AND ADMINISTRATION Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. PERCOCET®-5 is given orally. The usual adult dose is one tablet every 6 hours as needed for pain.

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CLINICOPATHOLOGICAL CONFERENCE

From the Intern and Resident Teaching Conferences at the Sioux Valley Hospital, conducted by the Department of Pathology of the Hospital and of the School of Medicine of the University of South Dakota



NINETEEN YEAR OLD KNOWN HEMOPHILIAC WHO UNDERWENT KNEE SURGERY

L. Gilbert Thatcher, M.D.*
Pediatrician-Discusser

John F. Barlow, M.D., FCAP**
Pathologist—Editor

CASE: 710936

This 19-year-old known hemophiliac was admitted to Sioux Valley Hospital for elective knee surgery.

The patient had been noted to have hemophilia since childhood. His younger brother was known to have hemophilia and two male cousins (maternal sister's sons) were also affected by the disease. There was also a suggestive history in two other male cousins but these diagnoses were not definite. There were no females in the family who had significant bleeding disease. The patient had been in good health and had worked as a carpenter for several years with active movement and occasional stress on his joints without unusual bleeding episodes. Four to six weeks prior to admission while running in spiked shoes, he sprained his right knee. Examination revealed tenderness over the medial joint line and a positive posterior thrust test. He was treated conservatively with crutches and ace bandage. He was unable to straighten out his knee the last five degrees and was thought to have a torn medial meniscus.

The patient had had minimal difficulties with hemarthroses in the past. However, he had cut his tongue and had had two teeth pulled. Both of these episodes were associated with excess bleeding which required transfusions. He had had a small laceration on his left hand requiring sutures but this was not associated with undue bleeding. He remembered that he had bruised excessively as a child but did not feel he had done so lately. There was no other history of significant hospitalizations or illnesses.

PHYSICAL EXAMINATION: Pulse 68/min. and regular, respirations 16/min. and regular, blood pressure 126 systolic and 64 diastolic, weight 143 lbs., height 5'6". There was no significant bruising, bleeding or evidence of joint contracture. Examination of the head, eyes, ears, nose and throat were unremarkable. The lungs were clear to auscultation and percussion. The heart was of normal size

and revealed no murmurs. Abdominal examination revealed no palpable organs, masses or tenderness. Neurologic examination was within normal limits.

LABORATORY DATA: Urinalysis - straw colored, clear, specific gravity 1.016, pH 5.0, negative for protein, glucose, ketone bodies, bile and hemoglobin; sediment 0-2 rbc/hpf. Hemoglobin 15.6 gms/dl, red count 5.22 million/mm³, hematocrit 45 vols/dl, mean corpuscular hemoglobin 30 micromicrograms, mean corpuscular volume 86 cubic micra, mean corpuscular hemoglobin concentration 34%, total leukocyte count 6800/mm³ with 49% segmented neutrophils, 2% neutrophilic bands, 3% eosinophils, 46% mature lymphocytes. The red cells showed slight anisocytosis. The platelets were normal in number and morphology. A zetacrit was 45% (within normal limits). Partial thromboplastin time was 51.0 seconds with a control of 30.0 seconds (normal up to 45.0 seconds). A factor VIII activity was 6% (normal 50-200%). A chest film was unremarkable.

On the second hospital day, a torn right medial meniscus was removed. Prior to surgery, the patient was given 25 bags of cryoprecipitate containing approximately 100 units of factor VIII in each bag. A factor VIII level after this infusion was 76%. Immediately after surgery it was 50%. The patient was treated with 20 cryoprecipitate bags every 12 hours for the next seven days and the dosage was then reduced to 15 bags twice daily for two days. The patient had an unremarkable postoperative course and underwent the usual postoperative manipulation following knee surgery. There was no evidence of bleeding. The patient was discharged on the 12th postoperative day after an uneventful course.

DR. THATCHER: This patient was a mild hemophiliac and the diagnosis of classic hemophilia (factor VIII deficiency) was well substantiated. Unfortunately, the patient tore his medial meniscus which untreated could have been a source of chronic trauma and potential bleeding in the knee joint.

It is crucial for adequate diagnosis and care of patients with hemophilia to be able to accurately measure factor VIII activity. We judge the severity of hemophilia by the level of their factor VIII activity in the plasma as follows: 0 to 1% severe; 2 to 5% moderately severe; 6 to 20% mild.

* Pediatric Hematologist and Oncologist, Sioux Valley Hospital; Professor of Pediatrics and Adolescent Medicine, School of Medicine, The University of South Dakota.

**Pathologist, Laboratory of Clinical Medicine and Sioux Valley Hospital; Professor of Pathology, School of Medicine, University of South Dakota.

Supported in part by Clinical Cancer Training Grant T12 CA 08032 from the National Cancer Institute of the National Institute of Health U.S. Public Health Service.

One should remember that any surgery in hemophiliacs is to be considered major surgery. Three essentials must be satisfied before any surgery is undertaken. First, we must be sure that the diagnosis of hemophilia is correct. Eighty percent of congenital coagulation deficiencies are represented by classic hemophilia (factor VIII deficiency). The other 20% are usually either a factor IX deficiency (Christmas disease) or Von Willebrand's disease.

Secondly, once the diagnosis of factor VIII deficiency has been established, laboratory support in the form of accurate factor VIII levels and a determination for the presence of an inhibitor to factor VIII in the plasma is necessary. The presence of inhibitors is best evaluated by a specific inhibitor assay. It can be suspected by observing the poor rise and/or rapid fall of factor VIII levels after administration of concentrates to the patient. I will elaborate on this later.

Thirdly, there must be a close working relationship with the laboratory so that an adequate amount of factor VIII concentrate is available before surgery is undertaken. An adequate amount of concentrate for 7 to 10 days of treatment should be available before surgery is contemplated.

At this point I would like to say something about the partial thromboplastin time (PTT). This test cannot be relied upon to monitor therapy in hemophilia. The PTT test, while a reasonable screening test for detection of hemophilia, is a poor test for monitoring therapy after serious injury or surgery because it usually normalizes when the factor VIII activity reaches 15-25%. A normal PTT will not tell you whether you have achieved only minimal clottable levels of factor VIII or more significant elevations. To maintain prolonged hemostasis obviously the higher factor VIII levels are necessary and only factor VIII assays can reflect those levels.

There are three essentials of treatment for the factor VIII deficient patient which I would like to emphasize. These essentials apply in general, not only to the patient undergoing surgery, but to any patient with hemophilia who has sustained significant injury and is bleeding.

1. Administer factor VIII promptly.

This decision requires experience but there is a tendency for physicians and patients to wait too long before administering factor VIII. Either through indecision or mechanical delays in hospital outpatient departments or emergency rooms, bleeding may be well established before treatment is begun. If the patient is allowed to hemorrhage into a joint for several days until an obviously swollen,

painful, tender joint develops, treatment and symptomatic relief may be much more prolonged. On the other hand, if one makes the decision early to administer factor VIII, a smaller total quantity of material can often suffice. Single dose therapy may even be sufficient and there is less likelihood of residual damage to the joint.

2. Administer factor VIII in sufficient amounts to achieve a hemostatic level of factor VIII (25% or better)

Coagulation should proceed normally if a factor VIII level is maintained above 20-25%. If the factor VIII falls much below this critical level, defective clotting may result. It is natural to want to minimize the amount of factor VIII given. If one administers enough factor VIII and in sufficient quantities to promptly and rapidly control bleeding, I believe less material is used in the long run.

For calculations of replacement therapy, it is useful to think in terms of units of factor VIII. One unit of factor VIII is defined as the amount of activity present in one ml. of pooled normal plasma (plasma with 100% activity). It has been observed that one unit of factor VIII infused per kilogram of body weight will raise the plasma factor VIII activity level approximately 2 percent.

The average bag of cryoprecipitate is estimated to contain 80-100 units or approximately 6-7 units per ml. Other commercially prepared dried concentrates contain from 10 to 25 units per ml. and each vial is conveniently labelled with the number of units per vial.

Accordingly, Abildgaard¹ has suggested the following general guidelines for the calculation of replacement amounts: for **serious bleeds** (such as surgical procedures, intracranial hemorrhage), 40-50 units/Kg. with repeat doses of 20-25 units/Kg. at 12 hour intervals until hemorrhage is controlled or the wound healed; for **moderate bleeds** (such as fully developed hemarthrosis, progressive soft tissue hemorrhages) 20-25 units/Kg.—repeat dose(s) may be required at 12-24 hours; for **minimal bleeds** (such as symptoms of discomfort but **no** objective signs such as swelling, redness, or heat and usually no history of trauma) 10 units/Kg., single dose often sufficient.

I would emphasize that the doses for minimal bleeds are not sufficient for the patient with significant trauma or with suspected bleeding in critical areas even though their initial symptoms and signs may be minimal. The minimal bleed group generally is limited to a few knowledgeable patients seen very early in their bleeding episode.

It is important to remember that these calcula-

tions apply to factor VIII use but not necessarily for other factor deficiency patients. (see Abildgaard)¹

3. Factor VIII should be given at frequent enough intervals and for long enough periods of time to maintain hemostasis and allow healing if necessary.

For this patient undergoing a surgical procedure, it was therefore important to maintain his factor VIII levels above hemostatic levels (20-25%) for sustained periods.

Repeat doses are generally given at 12 hour intervals because this time represents the half-disappearance time for factor VIII activity. A dose of 25 units per kilogram of body weight should raise the patient's factor VIII level to approximately 50% of normal. This level would fall to approximately 25% of normal in 12 hours thus reaching minimally hemostatic levels.

Often the second dose of replacement therapy is given after 8 hours to compensate for the initially more rapid fall-off of factor VIII activity. This probably reflects initial equilibration with the tissues as well as the normal degradation rate of the material.

The duration of treatment varies depending on the specific bleeding problem, but 8-14 days may be minimum time for control of surgical interventions and wound healing.

DR. BARLOW: If a hemophiliac patient reports that he has just seriously twisted his knee, but you examine him and you find that he is having no particular hemorrhage at that time except what might be expected from the injury, do you treat the patient promptly or do you try to use conservative measures in hopes that the patient will not need factor VIII?

DR. THATCHER: In general, I would treat him promptly. You will be surprised how accurately these patients can often estimate the extent of their injuries and be able to predict hemorrhage. If you wait until the knee is swollen with limitation of motion and pain, I think you are treating the joint too late, and are encouraging potential late joint complications.

DR. BARLOW: What about minimal injury such as a small laceration of the lip or a small laceration

of the frenulum in an infant? Do you think that you can treat most of these conservatively without factor VIII?

DR. THATCHER: No, in my experience, most of these patients will require factor VIII administration. In fact, they are often more likely to need repeated therapy to maintain hemostasis than a patient with a joint hemorrhage. Soft tissue bleeding, in general, will require higher levels of factor VIII to maintain hemostasis than hemarthrosis. The frenulum can often be a problem when torn and may require several days of therapy for adequate control of bleeding. Lacerations of the lip or mouth almost always require replacement factor VIII therapy for control.

*DR. WARREN ANDERSON: If you see a patient with an acute hemarthrosis, do you feel that you can adequately stop hemorrhage if you treat promptly and early with only one dose of factor VIII?

DR. THATCHER: There are several centers which suggest that giving a single dose calculated to raise the factor VIII level to 60-70% will suffice in most instances. Other centers combine this with 1 mg. per kilogram of body weight per day of prednisone for 3-5 days to reduce inflammation and pain. If treatment is started very early, some believe even smaller doses of factor VIII replacement will suffice. This is one reason why home therapy programs may be very good for some families.

**DR. RICHARD A. NICE: I would like to ask about the patient treatment after he goes home from surgery. Since the patient usually requires exercises and manipulation of a joint such as in this case, do you have to follow the patient with multiple factor VIII levels?

DR. THATCHER: I do not think this is necessary. The factor VIII level will drop to the resting or preoperative level within 24 hours after cessation of therapy. The resting levels of factor VIII activity remain quite constant throughout life. I simply follow the patient very carefully clinically for bleeding after he starts exercising his knee. Sometimes it is necessary to give replacement therapy regularly during periods of physiotherapy or manipulative exercises.

Before surgery is contemplated on a hemophiliac, one must be certain whether a factor VIII inhibitor is present. This most serious complication of hemophilia occurs in 10-15% of severe hemophiliacs. Patients with inhibitors are not candidates for surgery. Since the measurement of inhibitors is a more complex test, the blood specimen must often be shipped to an appropriate reference laboratory for detection. This is mandatory before elective surgery.

The presence of an inhibitor is often suspected

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**Orthopedic Surgeon, Sioux Valley Hospital; Clinical Faculty, School of Medicine, The University of South Dakota.

in the hemophiliac when the expected response to therapy is not achieved. One can measure the patient's level of factor VIII activity before and after administration. If the calculated dose does not rise to near the expected plasma level or the fall-off is much more rapid than normal, you may suspect the presence of an inhibitor to factor VIII. The appearance of an inhibitor is not necessarily related to the duration of the patient's disease or to the number of treatments with factor VIII which have been administered. We do not know why some patients develop inhibitors and others do not.

***ALICE LINGEN:** Does the inhibitor remain once it has been formed?

DR. THATCHER: Not always. The pattern is often not predictable. Administration of factor VIII concentrates does tend to stimulate the antibody once it is developed. The inhibitor, however, can slowly disappear over a period of time with or without administration of plasma or concentrates.

The management of the hemophiliac with an inhibitor can be complex and should be handled primarily at major centers. Basically one can try to

* Third Year Medical Student, University of South Dakota.

avoid administration of factor VIII material for a prolonged period. Hopefully the inhibitor level will fall and enable temporary effectiveness of factor VIII concentrates should serious bleeding occur. If the inhibitor level is low, an attempt to override the antibody with large doses of factor VIII concentrates can be tried; but this may drive the antibody to high levels. If the inhibitor level is high, current therapy approaches involve the use of activated prothrombin complexes (factors II, VII, IX & X concentrates) which are thought to also contain activated clotting substances often sufficient to provide hemostasis and clinical control of the bleeding. The ultimate role of this therapy has not been clearly defined as yet.

As always, when giving pooled blood products, the significant risk of hepatitis needs to be emphasized.

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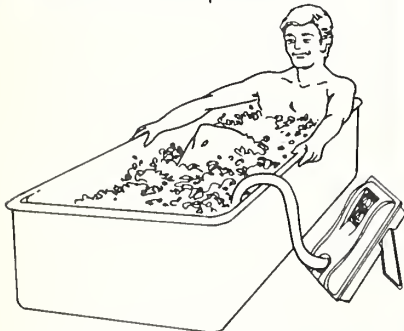
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SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS

3001 South Holly Avenue
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PROPOSED CONSTITUTION AND BYLAW CHANGES/ ADDITIONS

(To be voted upon at Annual Business Meeting, August 11, 1978)

SUBMITTED BY BOARD OF DIRECTORS

1. Constitution, Article III, Section 1. Subsection (1), (2), (3), and (4). Changes the words general practice and general practitioner to family practice and family practitioner.
2. Constitution, Article III, Section 1. Subsection (4). Changes the words postgraduate study to continuing medical education.
3. Bylaws, Chapter V, Section 1. Proposed addition of a Paragraph 3 to this Section: The President shall be encouraged and expected to attend the AAFP National Convention early in his Presidential year. The President shall be reimbursed by the organization for transportation expenses to and from said meeting, and for the cost of hotel accommodations while attending said meeting.
4. Bylaws, Chapter IX, Section 5. This now reads: The organization shall pay the sum of \$100 to each of three chapter members attending the annual State Officers Conference of the AAFP. Proposed changes would have Section 5 read as follows: The organization shall pay round trip coach airfare to each of the chapter officers (President, President-Elect, Vice-President) attending the annual State Officers Conference of the AAFP.
5. Bylaws, Chapter IX, Section 8. This adds an S in parentheses after the word director and after the word program. This is necessitated by having more than one Family Practice Residency Program in South Dakota.
6. Bylaws, Chapter IX, Section 9. This currently reads: The organization may pay the sum of \$100 to standing/special committee chairmen who attend AAFP sponsored national meetings of said committees (e.g. Education Chairman, Legislative Chairman). Proposed changes would have this read as follows: The organization may pay round trip coach airfare to standing/special committee chairmen (or designated alternate) who attend AAFP sponsored national meetings of said committees (e.g. Education Committee, Legislative Committee).
7. Bylaws, Chapter IX, Section 10. Proposed addition to the Bylaws. Section 10 (new) would read as follows: The organization will allow for waiver of SDAFP sponsored scientific session registration fees by Retired and Life members of SDAFP.

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CORE CONTENT REVIEW OF FAMILY MEDICINE

An all new Core Content Review of Family Medicine complete with many educational innovations will again be offered by the Connecticut and Ohio Academies of Family Physicians starting in October, 1978. The program, which is endorsed by the Board of Directors of AAFP, helps a physician evaluate his own knowledge of the Core Content of Family Medicine as defined by AAFP.

The 1978-79 Review has been expanded to eight months, reducing slightly the number of questions per month to make it easier for participants to complete the monthly supplements. In addition, the Review will contain special sections highlighting specific areas of medicine such as ophthalmology, cardiology, nutrition and legal medicine. Finally, there will be increased use of latent image progressive management problems.

The registration fee is \$55 for AAFP members and \$75 for nonmembers. Physicians interested in participating this year must register by August 31, 1978. Checks made out to CORE CONTENT REVIEW should be sent to:

The Core Content Review of Family Medicine
Conn. & Ohio Academies of Family Physicians
4075 North High Street
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GAFF EDUCATIONAL FOUNDATION

The popular home study course, Primary Care of the Newborn for the Non-Neonatologist, will be offered again this fall. The 30 CME hour course is accredited by the AAFP and the AMA. Course material is covered in four sessions and a final exam. Each session lasts two weeks.

Also, Primary Care Geriatrics, a "mini" home study course, is accredited for 30 CME hours by the AAFP and the AMA. The course offers a comprehensive review of geriatric care, written specifically for the family physician. There are four sessions and a final exam; each session is completed in two weeks.

Enrollment fee is \$180 for each course for AAFP members, \$220 for non-members, and all study materials are included. Enrollment deadline is July 10, 1978. The courses begin in October.

Write:

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BLACK HILLS SUMMER SEMINAR

The dates will be August 10-12, 1978. The location will be the Holiday Inn of the Northern Hills, Spearfish, SD. Watch for a program mailing.

If you've been prescribing pentobarbital or secobarbital for insomnia, there's good reason to reconsider.

More effective than secobarbital through 14 nights of administration...^{1,2}

In two separate sleep laboratory studies,¹ secobarbital 100 mg was found to lose much of its initial hypnotic effect in insomniac subjects within a two-week administration period. Dalmane® (flurazepam HCl), however, has been proved² to remain effective for both inducing and maintaining sleep at the end of two weeks, with the usual adult dosage (30 mg *h.s.*). Elderly and debilitated patients should receive 15 mg initially, to help preclude oversedation, dizziness or ataxia.

And more effective than pentobarbital through 28 nights of administration...^{3,4}

In an original study designed to evaluate hypnotic effectiveness for 28 consecutive nights of use, the rela-

tive ineffectiveness of pentobarbital was established after only two weeks.³ Dalmane, however, remained effective not only for 14 nights, but for 28 nights in chronic insomniacs,^{3,4} without increasing dosage from night to night. Prolonged administration of Dalmane is seldom necessary, but when it is, periodic blood counts and liver and kidney function tests should be performed.

More proven safety benefits for your patients than barbiturates...

Specific safety benefits not shared by barbiturate hypnotics: Dalmane (flurazepam HCl) may be used in patients on chronic warfarin therapy; no unacceptable fluctuation in prothrombin time has been reported.^{5,6} And Dalmane has been proved not to interfere chemically with many common laboratory tests.⁷⁻⁹ (Alterations have been reported due to pharmacological effects; see Adverse Reactions section of complete product information.)

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Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Several studies of minor tranquilizers (chlordiazepoxide, diazepam, and meprobamate) suggest increased risk of congenital malformations during the first trimester of pregnancy. Dalmane, a benzodiazepine, has not been studied adequately to determine whether it may be associated with such an increased risk. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, limit initial dosage to 15 mg to preclude oversedation, dizziness and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehen-

sion, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, paradoxical reactions, e.g., excitement, stimulation and hyperactivity, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients.

Elderly or debilitated patients: 15 mg initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

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This Is Your Medical Association

Mark Harlow, M.D., Aberdeen, was inducted as a Fellow of the American Academy of Orthopedic Surgeons at the group's annual meeting held in Dallas, Texas.

* * * *

Governor Kneip has proclaimed the week of May 1-7 Medical Assistants Week in South Dakota.

* * * *

Chris Moller, M.D., Mitchell, was elected to a three year term on the Board of Directors for Lutheran Social Services.

* * * *

James Gormley, former business manager of the Rapid City Medical Center and member of the Blue Shield Board of Directors, died January 24, following a brief illness.

* * * *

Klara Horthy, M.D., Kennebec, died at age 73 in a Sioux Falls hospital. Dr. Horthy attended medical school in Hungary, came to the United States and completed an internship at Sioux Valley Hospital, Sioux Falls in 1953. She then established her practice in Kennebec where she remained until her death. Dr. Horthy was a member of the Pierre District Medical Society and the State and American Medical Associations.

The Federal Drug Administration has designated **J. O. Mabee, M.D.**, Mitchell, as core investigator for intraocular implants in conjunction with cataract surgery.

* * * *

The Yankton Clinic announced the association of **Michael R. McVay, M.D.** in the practice of internal medicine. Dr. McVay is a graduate of the USD School of Medicine and Tufts University School of Medicine. He completed his internship and residency training at the University of Kentucky Medical Center and served with the U.S. Public Health Service in Gallup, New Mexico for two years prior to joining the Yankton Clinic.

The South Dakota Medical School Endowment Board of Directors gratefully acknowledges memorials received in memory of the following physicians:

Clark Johnson, M.D.
Matthew Langenfeld, M.D.
W. H. Saxton, M.D.
David Studenberg, M.D.

J. F. Barlow, M.D., Sioux Falls, spoke on "Administration, filtering and warming of blood and blood components" at the District II meeting of the South Dakota Association of Nurse Anesthetists.

* * * *

Jack T. Cowan, M.D., long time Pierre physician, died at age 66. Dr. Cowan was a graduate of Northwestern University Medical School and served his internship in Chicago before joining the Pierre Clinic in 1941. He was a member of the Pierre District, State and American Medical Associations. He is survived by his wife, Margaret, three daughters, one son, two brothers and one sister.

* * * *

Benjamin Wells, M.D., former Fort Meade Veterans Administration Hospital director and chief of staff, died at age 64. He was a graduate of the University of Iowa College of Medicine and spent several years in private practice in Iowa and Colorado before joining the Veterans Administration in 1946. Survivors include his wife, Barbara, Rapid City; two daughters and one sister.

JUST SIGN HERE...

During the spring semester of 1977, a group of sophomore medical students at the University of South Dakota School of Medicine, Vermillion, studied the issue of informed consent. Under the auspices of the Department of Community and Family Medicine, they set out to learn whether compliance with the law assured the desired outcome in terms of patient understanding and free choice.

A sample of 57 freshmen medical students and 67 undergraduate mathematics students were shown a typical consent form and asked a series of questions designed to test their understanding of what they had read.

Results indicate that even in this well-educated, non-hospitalized population, misunderstandings exist about the process of randomization, the immediate and projected benefits of the research, and the legal responsibilities of the researcher. Misunderstanding was greater among the less well educated (undergraduates) than among the better educated and more medically sophisticated (medical students). In most instances, respondents (particularly medical students) who misunderstood the consent form were more apt to be willing to sign it than were respondents who understood it. The single exception to this finding involved the issue of the researcher's legal liability; undergraduate respondents who realized that the researcher was legally liable were more often willing to sign than others.

The University of South Dakota School of Medicine has as its primary purpose the training of family practitioners. We medical students hear this statement repeatedly, and sometimes we wonder what difference that purpose makes in our daily lives.

What is a family physician, anyway? He or she sees the patient first, before preliminary diagnosis and screening, and remains responsible for the patient's well being throughout all stages of life. The family practitioner sees undifferentiated patients (all ages and both sexes) with undifferentiated illnesses (ingrown toenails to brain tumors, well-baby shots to terminal care.) Above all, it is the family practitioner who knows the patient best, who knows the family with its intersecting problems, whose knowledge and interest goes far beyond the organic pathology involved.

These expectations require that the medical student preparing for a career in family practice learn as much as possible about all facets of medicine, of

by

Mark Flanery

Judi Gravdal

Paul Hendrix

Wendell Hoffman

Patrick King

Daniel May

Terry O'Keefe

William Timmerman

Steven Waltman

Cecilia M. Roberts, Ph.D., Project Advisor*

course. But there is more. We will need to know about **people** as well as about patients. To this end, the Department of Community and Family Medicine under the direction of Loren H. Amundson, M.D. has provided us with a series of seminars during our sophomore year from which we may select one area for further study.

Our group chose to research the area of Legalities and Ethics in Medicine, and in particular to examine the issue of informed consent. With the help of attorneys from Sioux Falls and Yankton, we had learned the legal aspects of the question—then we set out to learn whether compliance with the law assured the desired outcomes in terms of patient understanding and free choice, whether legality would satisfy ethics.

Our reading led us to believe that it would not. In his book, **Human Subjects in Medical Experimentation**, Bradford H. Gray studied two research projects called respectively The Starvation-Abortion Study and The Labor Induction Drug Study. In both, consent forms had been signed, and in both, subsequent research disclosed great gaps in the understanding of the patients involved. Within the limits

*The authors, with the exception of the project advisor, were second year medical students at the University of South Dakota, School of Medicine.

of the time and resources available, our small study replicated these two larger ones.

THE RESEARCH

Ideally, this study would have been carried out on a sample of hospitalized patients actually involved in the "experiment" for which we requested consent. Since this was impossible for both practical and ethical reasons, we selected as our subjects two groups of students at Vermillion, one of 59 freshmen medical students and another of 67 undergraduate mathematics students. Each subject was handed a "consent form" (Fig. 1) and given sufficient time to read it.

CONSENT FORM

Dr. Levine of Harvard School of Medicine will be conducting research in this hospital, concerning the merits of a new medication designed to relieve pain.

The subjects for this work will be aged 21 to 60, and will be drawn from a pool of patients recovering from appendectomies, hemorrhoidectomies, and hernia repairs. You, as such a postoperative patient, have the option and opportunity to participate as a subject in this research. All subjects in the research will receive either the new drug, or another medication for the relief of postoperative pain. In order to assess the effectiveness of the new medication, three-hour blood levels of the medication will be taken, and the patient will be interviewed concerning his subjective report of pain. The research will run for three days postoperatively for each patient.

This is an entirely voluntary program, and any subject may withdraw at any time during the course of the research. Your participation would be greatly appreciated.

I have read and understand the above and I agree to participate in this research:

Signed _____

Date _____

Figure 1

The consent forms were then collected, and the subjects were handed a questionnaire (Fig. 2) designed to test their understanding of what they had just read. In general, response choices on this questionnaire mirrored the various responses of patients reported in the two studies mentioned above.

QUESTIONNAIRE

1. Will you be receiving the new medication?
☐ Yes
☐ No
☐ Unknown
2. How will the results of the experiment be determined?
 A. ☐ Urine test
 B. ☐ Blood test
 C. ☐ Interview
 D. ☐ A and B
 E. ☐ B and C
 F. ☐ A, B, and C
3. How often will the effectiveness of the medication be tested?
☐ Every hour

- ☐ Every 2 hours
- ☐ Every 3 hours
- ☐ Twice daily
- ☐ Once daily

4. How long will the experiment last?
☐ One post-op day
☐ Two post-op days
☐ Three post-op days
☐ Until pain goes away
☐ Until discharge from hospital
5. How long must you participate in the experiment?
☐ Three days
☐ May withdraw any time
☐ Until discharge from hospital
☐ Until pain goes away
6. Are the researchers legally responsible for any adverse reactions you may undergo from this experiment?
☐ Yes
☐ No
☐ Don't know
7. How do you expect participation in this experiment to benefit you? (You may check more than one response)
☐ I will get relief from pain
☐ This will improve relations with my doctor
☐ I will receive better care while in the hospital
8. Who will benefit from the experiment? (You may check more than one response)
☐ Myself
☐ My physician
☐ Other patients
☐ The researchers
☐ My family
☐ The hospital
9. How will the amount of the drug in your body be determined?
☐ Urinalysis
☐ By measuring blood pressure
☐ By X-ray examination
☐ By blood drawn from arm
☐ By radioactive scan
10. What will happen to you if you refuse to participate in this experiment?
☐ I may be asked to leave the hospital
☐ I may receive poorer quality care
☐ My physician may be displeased with me
☐ Nothing will happen to me
☐ I may have to stay in the hospital longer
11. If you were actually a patient, would you have signed this form?
☐ Yes
☐ No

Figure 2

A total of 124 usable questionnaires resulted, 57 from medical students and 67 from undergraduates. Two medical students' questionnaires were incomplete and therefore unusable.

Although the educational levels of the two groups differed by only four years, we hypothesized that the medical students' level of medical sophistication would be significantly higher due to their exposure to the Introduction to Clinical Medicine course and perhaps to some MECO experience. Thus we ex-

pected that the medical students would understand the form and interpret it correctly more often than would the undergraduate sample. Furthermore, we expected to find that understanding and correct interpretation would have an effect on the subject's willingness to take part in the "experiment." At the outset of our study, we were not sure what the direction of this latter effect might be.

ANALYSIS OF FINDINGS

The responses to all questions by the total sample were as follows:

Responses to Questions (Percent)		
Question	Response	Percent
1. Will get new drug?	*Don't know	60
	Yes	26
	No	14
2. How results determined?	*Blood & Interview	56
	Blood only	32
	All other	12
3. How often tested?	*Three hours	87
	All other	13
4. How long experiment last?	*Three days	81
	All other	19
5. How long participate?	*Quit any time	83
	Three days	14
	All other	3
6. Are researchers responsible?	*Yes	5
	No	35
	Don't know	60
7. How will you benefit? (Respondents allowed to choose more than one)	Pain relief	66
	Relationships	11
	Hospital care	23
	*Chose no answer	14
8. Who will benefit? (Re- spondents allowed to choose more than one)	*Researchers	88
	(*)Other patients	73
	Self	49
	Own doctor	33
	Hospital	23
	Family	15
9. How drug level tested?	*Blood drawn	89
	All other	11
10. If refuse?	*Nothing	95
	All other	5
11. Would you sign?	Yes	41
	No	59

* Right answer
(*) Possible right answer

Table 1

Right answers to questions 1, 2, 3, 4, 5, and 9 were combined to arrive at an overall estimate of respondents' reading comprehension. Right answers to questions 7 and 8 were combined to arrive at an overall estimate of respondents' awareness of the benefits of research. These two new measures and all the original measures were examined for differences between medical students and undergraduates. Those differences found to be statistically

significant ($x^2 \leq .05$) were as follows:

Responses to Questions by Class				
Questions	Response	Medical Student (Percent)		Under-Graduate (Percent)
1. Will get new drug	*Don't Know	73		48
	Yes	18		33
	No	9	$P \leq .01$	19
7. How will you benefit	Pain relief	53	$P \leq .01$	78
8. Who will benefit	Self	32	$P \leq .001$	64
	Hospital	14	$P \leq .05$	31
9. How drug level tested	Blood drawn	98		81
	All other	2	$P \leq .05$	19
Reading Comprehension	Perfect	35		19
	Near Perfect	35		20
	Good	23		19
	Mediocre	5		16
	Poor & Lower	2	$P \leq .05$	26
Aware of benefit process	Perfect	12		7
	Near Perfect	44		19
	Good	23		22
	Mediocre	7		28
	Poor & Lower	4	$P \leq .01$	24

Table 2

Next we analyzed all measures to see if our respondents' knowledge or perception affected whether or not they would sign the consent form. **The percentages reported in the following table are in the opposite direction** from those preceding; that is, whereas we have reported the percentages of medical students and undergraduates giving a particular response, here we are reporting the percentage of those giving each response who would agree to sign the form. This mode of analysis was selected to conform with the logical sequence of phenomena; education can be supposed to affect comprehension and comprehension in turn to affect one's decision to sign or not.

Willingness to Sign by Responses (Percent)		
Question	Response	Willing to Sign
6. Researchers Responsibilities	*Yes	80
	No	33
	Don't Know	43
		$P \leq .10$
7. How will you benefit	Pain relief expected	48
	Not expected	26
		$P \leq .05$
	*Gave no answer	43
	Gave some answer	23
		$P \leq .05$
8. Who will benefit	Self	52
	(Self not checked)	30
		$P \leq .05$
	(*)Other patients	45
	(Not checked)	29
		$P \leq .20$

Aware of benefit process	Perfect	17
	Near Perfect	32
	Good	61
	Mediocre	39
	Poor or worse	50
		$P \leq .10$

Table 3

Finally, we analyzed the responses using both controls in an effort to find out how the effects of right or wrong perceptions on willingness to sign differed between the two groups. The statistically significant results were as follows:

Willingness to Sign by Responses by Class (Percent)

Question	Response	Percent Willing to Sign	
		Medical Student	Under-Graduate
6. Researchers Responsibility	*Yes	50	100
	No	50	22
	Don't Know	44	42
		N.S.	$P \leq .02$
7. How you benefit	Pain relief	70	35
	*(Not checked)	18	64
		$P \leq .001$	N.S.
	*No answer	9	50
	(Some answer)	54	50
		$P \leq .05$	N.S.
	Better hospital care	20	38
	*(Not checked)	55	36
		$P \leq .05$	N.S.
8. Who benefits	Self	67	45
	*(Not checked)	36	21
		$P \leq .10$	$P \leq .10$
Aware of Benefit Process	Perfect	0	40
	Near Perfect	44	7
	Good	69	53
	Mediocre	50	32
	Poor & Below	50	50
		$P \leq .05$	N.S.

Table 4

DISCUSSION

The lowest level of education and medical sophistication was represented in this sample by university undergraduates, a level significantly above that of the average hospitalized patient. Nor were these students subject to the emotional turmoil common to preoperative hospital patients. Their reading comprehension and recall, their knowledge of the research process in general, and their ability to make decisions are thus greater than those of most of the patients we may expect to meet.

And yet we see that even under these best conditions, comprehension was often poor. Only among those who had already completed college and whose college courses had emphasized science (medical students) did more than one-half understand that random assignment and dual measurement was planned—even though the consent form clearly, and **legally**, includes both statements. Whether this dif-

ference reflects medical sophistication or exposure to research design is probably irrelevant. We can assume that most patients will have less of both than any student in our sample. In the Labor Induction Study referred to earlier, only about one-third of the subjects interviewed knew this facet of the research.

With regard to how the results of the experiment were to be determined, we found a large (though not statistically significant at the .05 level) difference between our two educational levels. More than one-third of the medical students and well over half the undergraduates did not realize that both blood test and interview were to be used. Yet again the form states this very clearly. Furthermore, one-fourth of our undergraduate students were not aware that they might withdraw from the experiment at any time. This of course means that most of them, up to three-quarters in this case, **did** understand this very important condition. Our focus on the smaller number who did not understand perhaps reflects our own bias. Nevertheless, we do seem to have uncovered the need to go beyond "legal" requirements.

Responses to questions concerning expectations of benefits also causes us concern. Just over one-half the medical students and nearly eighty percent of the undergraduates felt that they would get relief from pain **by participation in the experiment**. Adequate analgesics already exist, and would certainly be given to any patient who needed them. Did our subjects believe that a "new drug" (even an untested one) must be better than those already in use? Interview reports from the Labor Induction Study show that this belief is common. Did they suppose that those not participating would be given no drug at all? Were they simply confusing research and treatment? The strong association between this response and the subjects' willingness to sign the form suggest that one of these conjectures may be true.

We note also that this effect is much stronger among medical students than it is among undergraduates. Without further evidence, we can supply no reason for this phenomenon. Speculations are endless—Are medical students more fearful of pain? Well on their way to becoming the "difficult patients" that physicians are reputed to be?

The less medically sophisticated undergraduates perceived the benefits of the experiment as more widespread than did the medical students, although we were surprised to see that over one-quarter even of these (medical students) felt that their own physician would gain. This misperception, and that pertaining to the hospital, alerted us to the need to

be very sure that our future patients understand the relationship between researchers, hospitals, and private physicians.

The greatest area of lack of knowledge proves to be the question of the researcher's legal responsibility. In point of fact, researchers **are** legally responsible for the results of their activities. The consent form did not contain this information—**legally**—and neither the medical students nor the undergraduates knew it. Can we suppose that hospitalized patients do? We doubt it.

This finding is all the more ironic when we see that this piece of knowledge significantly **increased** the unsophisticated subjects' willingness to sign the form. All our reading tells us, and the experiences of our own faculty attest, that most hospitalized patients **do** agree to participate in such experiments when asked. Those subjects who reported "would not sign" in our study probably would in a real situation. This question is at best a measure of their comfort with the research described. And while we find that in most instances misinformation increased comfort (**mis**-informed consent?), in this case subjects who knew the truth were most apt to agree to sign the form.

CONCLUSION

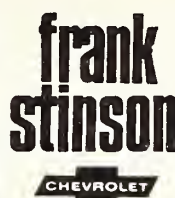
The majority of patients do, and will probably continue to, sign consent forms such as ours willy-nilly, whether informed or misinformed. We need not be overly fearful of the fact that in this study that was not the case. Research will survive, as it should.

But for the great number of us who will spend our lives not primarily as researchers but as family physicians, the message is clear. We have learned that our patients will misunderstand and misinterpret even those consent forms which comply most strictly with all legal requirements. And since our ethics require that informed consent be **truly** informed, we now realize that our job will include being very sure that our hospitalized patients understand, as far as is possible, everything they should understand. Consent forms, whether for research or for necessary treatment procedures, are a small but vital part of the hospital experience.

Our project was a small one. But we will be better physicians for having done it.

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Number 6

Peritoneal Dialysis

Kenneth Hunt, M.D.

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**Current Progress in Obstetrics and
Gynecology, Lecture #6—Sequelae
of Incomplete Gynecologic Operations:**

I. Uterine Tubes

Brooks Ranney, M.D.

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Long History of Skin Disorder and
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M. W. Borke, M.D.

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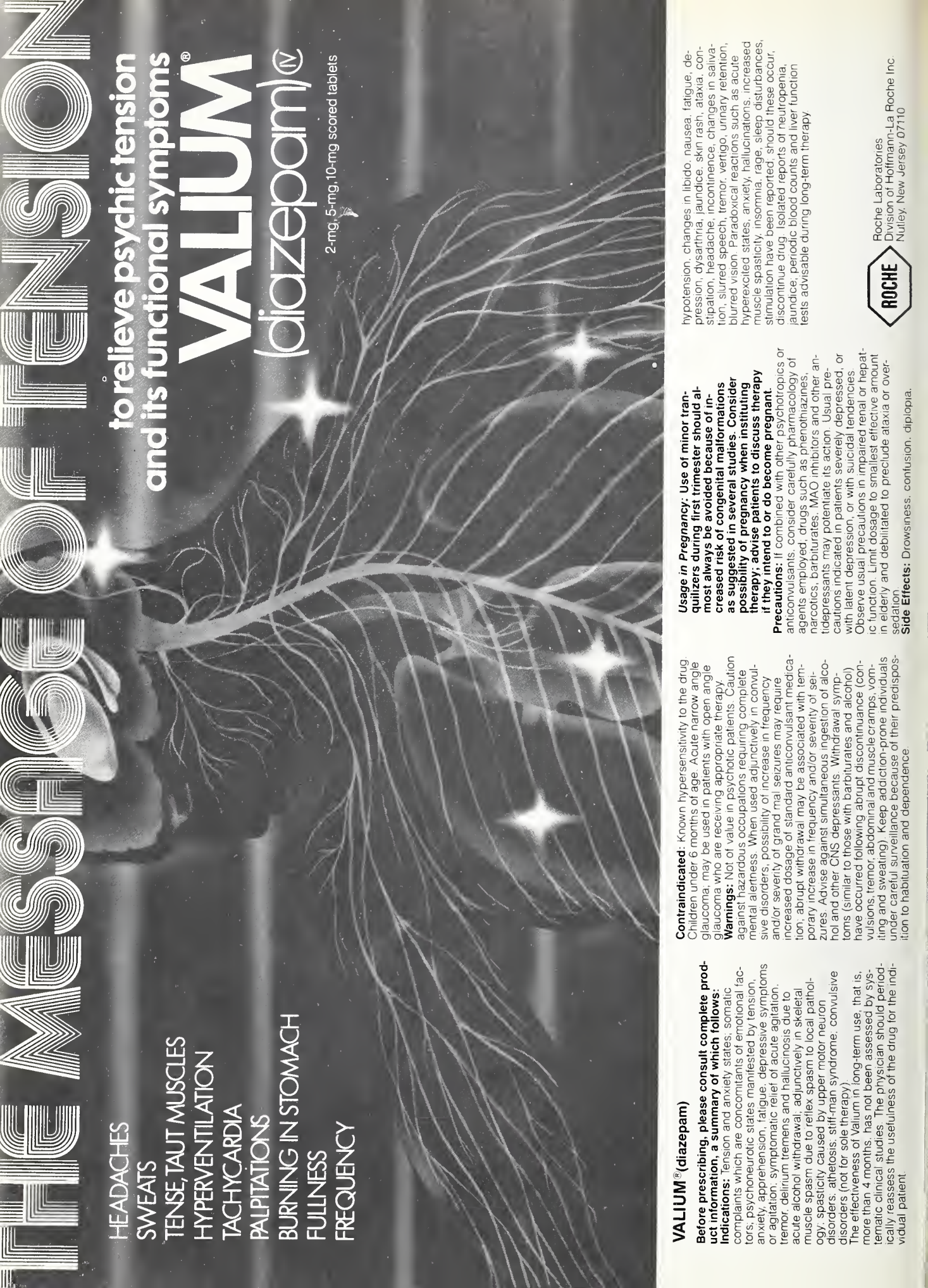
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Usage in Pregnancy: Use of minor tranquilizers during first trimester should always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over-sedation.

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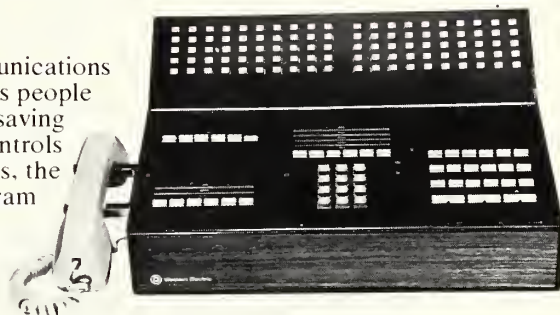
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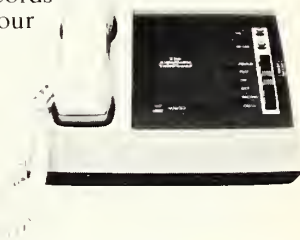
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Future Meetings

June

Family Practice Review, Radisson St.
Paul Hotel, St. Paul, MN, June 26-
30. Fee: \$275. Contact: Office of
CME, Box 293, Mayo Memorial
Bldg., 412 Delaware St., SE,
Minneapolis, MN 55455.

July

Internal Medicine, YMCA of the
Rockies, Estes Park, CO, July 10-
14. Fee: \$175. Contact: CME, U.
of Colorado School of Medicine,
4200 E. Ninth Ave., Denver, CO
80262.

**Coronary Disease, Exercise Testing,
and Cardiac Rehabilitation**, The
Regency, Denver, CO, July 21-23.
Fee: \$195. 13 hrs. AMA and AAFP
credits. Contact: Internat'l Med.
Edu. Corp., 64 Inverness Dr., E.,
Englewood, CO 80110.

August

1978 Black Hills Summer Seminar,
Holiday Inn of the Northern Hills,
Spearfish, SD, Aug. 10-12. 15 hrs.
AMA and AAFP credits. Fee:
\$50.00. Contact: Black Hills Sum-

mer Seminar, 608 West Ave., N.,
Sioux Falls, SD 57104.

**Coronary Disease, Exercise Testing,
and Cardiac Rehabilitation**, Play-
boy Club, Lake Geneva, WI, Aug.
11-13. 13 hrs. AMA & AAFP cred-
its. Fee: \$195. Contact: Internat'l
Med. Edu. Corp., 64 Inverness Dr.,
E., Englewood, CO 80110.

Aspen Mushroom Conference, Wild-
wood Inn, Snowmaas at Aspen, CO,
Aug. 13-18. Contact: Beth Israel
Hosp., 1601 Lowell Blvd., Denver,
CO 80204.

**Physicians and Their Families: An
Experience in Communication**, The
Menninger Foundation, YMCA of
the Rockies, Estes Park, CO, Aug.
13-18. 25 hrs. AMA Category I and
prescribed AAFP credits. Fee: \$325.
Contact: Mrs. June Housholder,
Div. of CME, The Menninger Founda-
tion, P. O. Box 829, Topeka, KS
66601.

September

**American Cancer Society National
Conference on the Care of the
Child with Cancer**, The Sheraton-
Boston Hotel, Boston, MA, Sept.

11-13. Contact: Sidney Arje, M.D.,
American Cancer Society, 777 Third
Ave., New York, NY 10017.

**38th Annual AMA Congress on Oc-
cupational Health**, Tucson, AZ,
Sept. 14-16. 15 hrs. AMA Category
I. Fee: \$60. Contact: Barbara Jans-
son, Dept. of Environmental, Pub-
lic and Occupational Health, AMA,
535 N. Dearborn St., Chicago, IL
60610.

**Preventive Medicine Seminar, Inter-
national Academy of Preventive
Medicine**, Bonaventure, Los Ange-
les, CA, Sept. 16-17. Contact: IAPM
Headquarters, 10409 Town &
Country Way, Houston, TX 77024.

**1978 Annual Otolaryngologic Assem-
bly**, Eye & Ear Infirmary, U. of Il-
linois Hosp., Chicago, IL, Sept. 17-
22. Contact: Dept. of Otolaryngol-
ogy, Ill. Eye & Ear Infirmary, 1855
West Taylor, Chicago, IL 60612.

Hospital Medical Staff Conference,
The Mark, Vail, CO, Sept. 25-28.
Fee: \$160. Contact: CME, U. of
Colorado School of Medicine, 4200
E. Ninth Ave., Denver, CO 80262.

PERITONEAL DIALYSIS

by
Kenneth Hunt, MD*

Chronic and acute peritoneal dialysis have been used extensively over the last 15 to 20 years. Rather modest, but significant, recent developmental improvements (specifically concerning the disposable commercially available materials) have made this procedure safe and technically uncomplicated.

CASE PRESENTATION

A 65 year old man was admitted to the Intensive Care Unit with renal failure and profound acidosis complicated by sepsis, pneumonia, diabetes mellitus, and congestive heart failure. (Figure 1). Initial

normal range of 7.42. Following dialysis, the patient continued to improve, but then became febrile with blood cultures positive for pseudomonas (probably secondary to a urinary tract infection). His renal failure worsened, and on March 10, 1976 the patient was again dialyzed. BUN prior to dialysis was 126

DATE	2-18-76	2-20-76	3-10-76	3-12-76	4-13-76	4-15-76
*CPD or APD	PRE-APD	POST-APD	PRE-APD	POST-APD	PRE-CPD	POST-CPD
DURATION	38 hrs.		44 hrs		46½ hrs.	
LITERS OF DIALYSATE	72 L		82 L		55 L	
BUN (mg%)	108	32	126	19	116	49
CREATININE (mg%)	7.0	5.3	8.9	4.2	7.8	4.1
Na/K (mEq/L)	142/5.1	144/3.0	130/6.0	140/3.7	125/4.4	141/3.3
HCO ₃ (mEq/L)	3	18	12	24	7	28
pH	7.01	7.42	7.31	7.42	7.12	7.48
ALBUMIN (Gm%)	4.3	3.6	3.0	2.8	3.3	2.5

*CPD—Chronic Peritoneal Dialysis

APD—Acute Peritoneal Dialysis

Figure 1
Peritoneal Dialysis Flow Sheet

laboratory data on February 18th included: BUN-108 mg%, serum creatinine-7 mg%, serum bicarbonate-less than 3 mEq/L. and initial pH of 7.01. Peritoneal dialysis was begun on the evening of admission in response to the very low pH and low bicarbonate level and the realization that the patient was "in extremis". A dialysis run of approximately 38 hours was accomplished using 72 liters of fluid. There were no difficulties with this dialysis and the patient improved significantly. At the end of dialysis, his BUN was 32 mg%, creatinine was 5.3 mg%, serum bicarbonate 18 mEq/L. and pH was in the

mg%, creatinine-8.9 mg%, serum bicarbonate-12 mEq/L., pH-7.31 and calcium 6.5 mg%. Forty-four (44) hours of dialysis was accomplished using 82 liters of dialysate. BUN following dialysis was 19 mg%, serum creatinine fell to 4.2 mg% and serum bicarbonate was in the normal range of 24 mEq/L. Serum albumin dropped to 2.8 gm% but this was transient and his albumin has remained stable throughout his multiple dialyses. Following the second dialysis, the patient steadily improved and was discharged on March 26, 1976.

He was readmitted on April 13, 1976 with uremia, sepsis, and acidosis secondary to a urinary tract infection. On admission his BUN was 116 mg%,

* Resident, Dept. of Internal Medicine, Sacred Heart Hosp., Yankton, SD.

DATE	4-30-76	5-11-76	5-21-76	6-1-76	6-12-76	6-21-76	7-9-76	7-22-76
LITERS OF DIALYSATE	30 L	32 L	38 L	40 L	38 L	40 L	38 L	31 L
BUN (mg%)	51	53	59	(27)	(27)	61 (16)	54 (16)	56 (30)
CREATININE (mg%)	6.7	(3.8)	(4.4)	(3.6)	(2.9)	(2.8)	—	(5.1)
Na/I (mEq/L)	126/4.4	141/5.3	157/7.2	138/4.5	136/4.7	140/5.6	141/5.4	142/5.4 (4.8)
HCO ₃ (mEq/L)	18	—	(25)	14	20	23	15	17
pH	7.38	—	—	7.29	7.32	7.33	—	7.24
ALBUMIN (Gm%)	3.1	(3.3)	4.1	(3.4)	(3.4)	(3.5)	3.5	3.7

* Parenthesis indicates values post-dialysis

Figure 2
Chronic Peritoneal Dialysis Flow Sheet

creatinine-7.8 mg% and pH was 7.12. On the evening of the admission, a chronic peritoneal dialysis catheter was inserted and the first of a series of chronic dialyses was begun. (Figure 2). After 46½ hours of dialysis, his BUN fell to 49 mg%, his serum creatinine was 4.1 mg%, pH and bicarbonate were at normal levels. He was much improved following dialysis and there were no complications with this procedure. The sepsis was treated with appropriate antibiotics and the patient was discharged home in stable condition. Following discharge, he was readmitted to the Intensive Care Unit for routine chronic peritoneal dialysis every 10 days to 2 weeks. Throughout this time, the patient remained stable, afebrile, and had no significant complaints.

On his last admission of July 22, 1976, there were technical problems with the catheter; fluid passed easily through the catheter but return was very slow. The chronic catheter was removed and acute peritoneal dialysis was performed. Following discharge from the hospital, he has remained stable and asymptomatic and is doing quite well at home. He has not required further dialysis in the 10 month follow-up period.

This case represents an example of a type of patient with renal failure that can be successfully treated using both chronic and acute peritoneal dialysis in a community hospital.

METHODOLOGY

Our procedures for both chronic and acute peritoneal dialysis are similar, except for placement of the catheter and the type of catheter used. The disposable catheter used for acute peritoneal dialysis has had extensive use in the emergency room for the diagnosis of intra-abdominal bleeding with use of peritoneal lavage. With proper technique, catheter placement is safe and free of major complications.

After placing a Foley catheter in the bladder, a small incision is made below the umbilicus and is carried down to fascia (linea alba). If there has been no previous abdominal surgery or previous episode of peritonitis which might result in adhesions, the fascia is not opened. Under direct visualization of the fascia, the catheter (with the stylette in place) is inserted into the abdominal cavity. It is angulated towards the left lower quadrant and fastened to the skin using suture. If there has been previous surgery in that area, an incision can be made lateral to the midline and the peritoneum can be incised, with placement of the catheter into the abdominal cavity by direct visualization. This helps prevent injury to bowel or other organs. With the catheter in place, dialysis is begun (Figure 3).

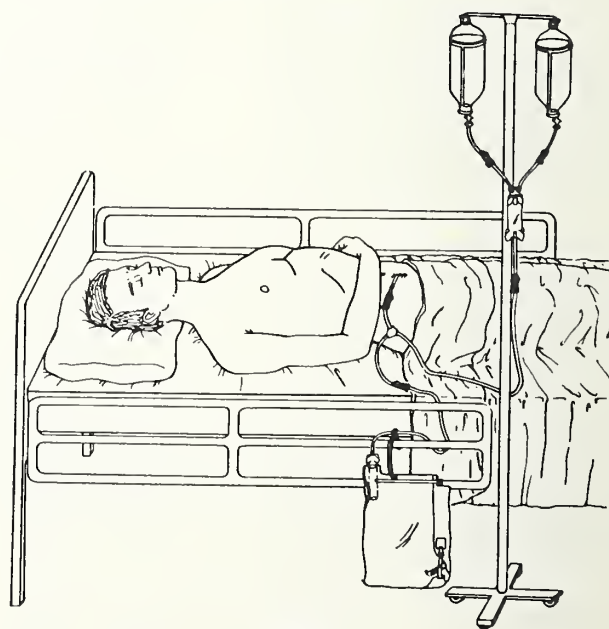


Figure 3

The commercial solutions used for dialysis are available in two concentrations: 1.5 gm% and 4.25

gm% of dextrose, with respective calculated osmolalities of 366 mOsm. and 505 mOsm. They contain 141 mEq Na, 3.5 mEq Ca, 1.5 mEq Mg, and 45 mEq lactate. They do not contain any potassium because of the frequent hyperkalemia associated with renal disease. KCl (4 mEq/L.) is added to each liter of dialysate as indicated. We add 1,000 units of Heparin to every other liter of dialysate but do not routinely use antibiotics.

All of the dialysis solutions are hyperosmolar to plasma to prevent overhydration of the patient. The patient receiving the 1.5 gm% solution may lose up to 2.4 to 4.8 liters of fluid in approximately 24 hours. This loss can be made up with IV or PO fluids as required.

Experimentally and clinically, infusion of 2 liters every one-half hour provides the most efficient dialysis in adults, there being no increased efficiency with larger volumes. From a practical standpoint, the common practice is to infuse 2 liters as rapidly as possible (which usually takes approximately 5 minutes) and to allow approximately 45 minutes for mixing, and then to drain off the dialysate as rapidly as possible. The total time for a dialysis run is approximately one hour. This schedule is generally more than adequate for most patients requiring acute or chronic dialysis. (For acute poisoning or life-threatening metabolic and fluid abnormalities, perhaps 2 liters infused every one-half hour would be more desirable.) Dialysis is generally carried out for 24 to 36 hours requiring 48 to 72 one-liter bottles of dialysis fluid.

PHYSIOLOGY OF PERITONEAL DIALYSIS

The physiology of peritoneal dialysis is based on the fact that the peritoneum is a semi-permeable membrane with an area of approximately 22,000 square centimeters as compared to the kidneys with a total area of 18,000 square centimeters. The peritoneum is relatively impermeable to most proteins and large molecules, although there is leakage and diffusion of protein into the dialysate, and diffusion of dextrose into the blood stream. Volume shifts depend on the osmolality of the plasma as compared to the osmolality of the dialysate but the dialysis fluid preparations commonly used are hypertonic to plasma except in cases of severe azotemia and/or hypernatremia. There may also be increased protein loss with membrane irritation or inflammation. With peritoneal dialysis, creatinine clearance is approximately 15 to 22 cc's an hour which is approximately 1/5 as efficient as hemodialysis. However, as seen in anephric patients receiving chronic peritoneal

dialysis of approximately 36 to 42 hours a week, BUN and serum creatinine are higher than with hemodialysis, but the patient's well-being is similar to those on hemodialysis who may have a lower BUN and serum creatinine levels. This suggests that there may be other dialyzable substances ("middle molecules") which are more efficiently removed in peritoneal dialysis than by hemodialysis, accounting for patients who seem to do well in spite of higher BUN and serum creatinine levels.

One potential problem with peritoneal dialysis is hyperglycemia. With 2 liters of the 1.5 gm% dialysate, approximately 50 per cent of the total glucose may be absorbed. In a 24 hour period (using 48 liters of dialysate), this amounts to approximately 360 grams of glucose which is equivalent to the amount of glucose in approximately 7 liters of D5W. Most nondiabetic patients can handle this load without difficulty, but diabetics require careful monitoring. Hyperglycemia may be dangerous and there have been fatal cases of hyperglycemia reported. Therefore, blood glucose levels should be monitored carefully in diabetic patients and a sliding scale of regular insulin may be necessary to prevent dangerous hyperglycemia. Death can also result from too sudden lowering of blood sugar causing a concentration gradient between blood glucose and CNS glucose level. This occurs since glucose diffuses slowly into and out of the central nervous system, with a lag time of several hours, and a significant differential in concentration can result in cerebral edema.

One major advantage of peritoneal dialysis over hemodialysis is the slower rate of fluid shift and slower chemical changes. There is a lesser chance of sudden changes in fluid and electrolyte balance which can result in convulsions, arrhythmias, hypotension or hypertension. This is especially important in patients with chronic metabolic abnormalities or unstable patients.

The relative rate of diffusion of different solutes is related to molecular size (mol. wt.), the degree of ionization of the particular particle, and also to the concentration of each solute in blood and in the dialyzing fluid. This is expressed clinically as the peritoneal clearance. Urea (mol. wt.=60) has a greater peritoneal clearance than creatinine (mol. wt.=113); urea is also present in higher concentration in blood than is creatinine. In clinical usage, there is minimal peritoneal clearance of chloride ion (mol. wt.=35.5) or sodium (mol. wt.=23) since the concentration of each ion in the dialysate equals that of normal serum.

INDICATIONS AND CONTRAINDICATIONS

The *general* indications for acute peritoneal dialysis are shown in Table 1. There are *preferential* indications for peritoneal dialysis; for acute dialysis these include:

1. Acute or chronic renal failure when only 1 or 2, or infrequent dialysis are anticipated.
2. When hemodialysis is unavailable and patient unstable.
3. Refractory congestive heart failure with pulmonary edema.
4. Certain drug poisonings especially Dilantin and Glutethimide.
5. When the risk of bleeding is very significant.
6. In very ill, unstable patients.
7. In diabetes when there are vascular access problems with hemodialysis.

The *preferential* indications for chronic peritoneal dialysis have been very well outlined by Tenkoff, and include:

1. Patients awaiting kidney transplant.
2. When there are logistic problems, especially if hemodialysis would require the patient moving from his home. Chronic peritoneal dialysis may be especially indicated when it is estimated that only two or so dialysis per month are required.
3. Small children and older patients in whom there are technical problems with hemodialysis—especially with the child. These include shunt problems, volume shifts, etc.
4. Advanced cardiovascular disease.
5. Where hemodialysis is considered "too dangerous". This may relate to patient stability, fluid and electrolyte balance, etc.

There are, therefore, "preferential" indications for chronic and acute dialysis and not just "logistic" indications.

The advantages and disadvantages of peritoneal dialysis and hemodialysis are indicated in Table 2.

COMPLICATIONS AND SIDE EFFECTS

1. **Peritonitis:** There has been a significant decrease in the incidence of peritonitis since the development of sterile, prepackaged and disposable dialysis equipment. The incidence of peritonitis depends on definition; symptomatic peritonitis was seen in 0.6 per cent of Tenkoff's patients in Seattle, who are on automated peritoneal dialysis (more than 600 patients). There were 6 patients of a total of 60 who had fever and signs of peritoneal irritation reported in Ribot's study, all re-

1. Acute and chronic renal failure. (In relation to mental status, BUN, potassium, acidosis)
2. Severe (refractory) fluid retention, especially pulmonary edema.
3. Electrolyte disorders.
4. Acute poisoning.
5. Hepatic coma. (Controversial).
6. Hyperthermia, Hypothermia

Table 1
General Indications for Acute Peritoneal Dialysis

HEMODIALYSIS	
ADVANTAGES	DISADVANTAGES
1. More Efficient	1. Requires Anti coagulants
2. Less Risk of Infection	2. Requires Blood
3. (May) Require Less "Set-up" Time	3. Requires HD center and trained personnel—more complex
	4. Risk of Bleeding
	5. Risk of "Dysequilibrium Syndrome"
	6. Risk of Hepatitis
	7. Expensive

PERITONEAL DIALYSIS	
ADVANTAGES	DISADVANTAGES
1. Simplicity	1. Less Efficient than HD
2. Less change of "Dysequilibrium Syndrome"	2. Poor for Some Poisons
3. Minimal Bleeding Risk	3. Risk of Peritonitis and Intra-abdominal Injury
4. Requires No Blood	4. Risk of Respiratory Compromise
5. Dialysis "Center" Unnecessary	
6. Less "Set-up" Time	

Table 2
Advantages and Disadvantages of Hemodialysis and Peritoneal Dialysis

- sponded to therapy without sequelae. In 1 out of 91 patients, peritonitis developed but responded to therapy. Some patients may develop a low-grade bacterial peritonitis which almost always responds to antibiotics. Peritoneal inflammation may be secondary to mechanical or chemical effect, as well as bacterial sources and most are mild and self-limiting.
2. **Incorrect catheter placement:** The incidence of incorrect catheter placement should be very low if one uses the stylette catheter and the cut-down method as discussed previously.
 3. **Intra-abdominal injury:** This should also be a rare complication especially if one avoids catheter placement in an area of previous surgery and if a Foley catheter is placed prior to dialysis catheter insertion.
 4. **Bleeding:** Significant bleeding is rare.
 5. **Pain:** This is rarely a major problem but often occurs with the first few "runs" of dialysis, then generally disappears. If pain does persist, often 10 cc's of 1 per cent Xylocaine in the dialysate is adequate for pain control.
 6. **Protein depletion:** This is not now the signifi-

cant problem some expressed in the past. There are few studies which show significant hypoproteinemia if the patient is managed well. Unlike chronic renal patients not on dialysis, patients on peritoneal dialysis should eat a high protein diet (greater than 1 gram per kilogram per day). In debilitated patients who are unable to maintain a high protein and high calorie diet, there may be problems with peritoneal dialysis. In Tenkoff's study, there were no patients who required parenteral protein substitutes. It has been shown that 40 to 50 grams of protein are lost per dialysis (of approximately 48 hours duration). This depends in part on the extent of peritoneal irritation or inflammation, and the dextrose concentration of the dialysis fluid. Most protein is lost early in the dialysis run, with much less lost in later exchanges.

7. **Hypotension:** Volume depletion is the major factor contributing to hypotension, although vagal reflex with bradycardia can be a factor. Hypotension can be kept to a minimum with careful management of intake and output. It is less of a problem with peritoneal dialysis than with hemodialysis—especially in the unstable patient. Volume overload is generally not a problem, again, careful attention to input and output details is mandatory. Each liter of dialysate from one manufacturer has at least 45 extra cc's of fluid per bottle. In measuring 2 different bottles of fluid, we found one to have 1,090 cc's and the other to have 1,065 cc's of fluid. If this excess volume is not recorded as "intake", a total of 72 liters of fluid used per dialysis would amount to 3-5 liters of excess fluid not accounted for in the total intake.
8. **Hyperglycemia:** This is rarely symptomatic, but as noted previously, blood sugars and urine sugars must be monitored carefully.
9. **Catheter Blockage:** In acute peritoneal dialysis, with proper catheter placement, this problem is generally transient and is almost always due to occlusion of the catheter by omentum. It is rarely secondary to clots. Repositioning of the patient, or adding extra fluid for one of the dialysis runs is generally sufficient for proper functioning. With chronic peritoneal dialysis, blockage of the catheter may become a problem, generally because of adhesions and fibrous clots. It is especially of concern if the interval between dialysis is more than 7-10 days.

10. **Impaired Respirations:** Respiratory compromise secondary to abdominal distention from the dialysate fluid in presence of co-existing respiratory disease may be a relative contraindication to peritoneal dialysis.
11. **Recording Errors:** Input and output inaccuracies are problems most often related to inexperience. Careful body-weight measurements are a crosscheck.
12. **"Dysequilibrium Syndrome":** This is a result of rapid fluid, electrolyte and metabolic shifts that can rarely occur with peritoneal dialysis (it is more common with hemodialysis).

CONTRAINDICATIONS TO ACUTE AND CHRONIC PERITONEAL DIALYSIS INCLUDE:

1. **Abdominal cellulitis or intra-abdominal infection:** Intra-abdominal infection is not a contraindication unless there is localized infection or abscess, or gangrenous or compromised bowel. Acute peritonitis is not presently considered a contraindication to peritoneal dialysis, and peritoneal lavage may improve the infection with installation of antibiotics with the dialysis fluid.
2. **Metastatic intra-abdominal malignancy.**
3. **Severe abdominal trauma.**
4. **Recent abdominal surgery:** This is a relative contraindication but many patients have been dialyzed successfully shortly after surgery, however there should be no drains in place (difficult to evaluate leakage).
5. **Inability to maintain an adequate diet:** (This relates to chronic peritoneal dialysis only).
6. **Multiple adhesions:** This is a relative contraindication; careful placement of the catheter under direct visualization of the peritoneum and intra-abdominal contents makes peritoneal dialysis a safe procedure, even with adhesions.

Conclusion: Acute and chronic peritoneal dialysis may be preferential or alternative modes of dialysis for a significant number of patients—not only in medical centers serving large populations, but in smaller community hospitals as well.

ACKNOWLEDGEMENT

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President's Page

The effort on the part of government to discredit the medical profession continues. On the 25th of April, 1978, the President of the United States at the end of his news conference, used a physician and his tax deductions as an example of why we need "tax reform" in this country. The deductions were legitimate.

On the 6th of May, 1978, the President, speaking in Oregon and Washington, denounced the AMA as "the major obstacle to progress in our country to having a better health care system in years gone by." This belies the facts.

He further indicated, and I quote from the Minneapolis Tribune, that "doctors care very seriously about their patients but when you let doctors organize into the American Medical Association, their interest is to protect the interests not of patients, but of doctors." Again, further distortion of the truth.

This attitude on the part of some politicians in high places is not new to you. I repeat these distortions only as a reminder that the battle is intensifying on the part of those people who wish to gain total control of the practice of medicine in this country. You and I know that the harm to be done is to the public in the long run. Progress in medicine has never come from politicians or government, but directly from the efforts of our profession. If progress is to continue, it will have to continue to come from this source. Government control, by history, stifles initiative and innovation and thus reduces progress to a shadow of its former self. This is the legacy to the public that these men are promoting.

My purpose in writing this, is to urge you **individually**, to actively express your views when you read or hear some of these comments. Let our elected officials know what you as an **individual** think of their statements and opinions. Write a letter to the President, your congressman or your senators, or all of them, and tell them that you agree or disagree with what they are saying or doing. Tell them how you feel their proposals or programs are going to affect your patients, both for the short term and the long term.

Ladies and gentlemen, the time is now for you to exercise your citizens' rights in this regard. No one knows more about health care than you, and your opinions are invaluable. We can only hope they will be considered. It is the only hope the public has for something better than mediocrity in the end. Certainly, the level of excellence they have come to expect and deserve will be gone otherwise.

Fraternally,
Russell H. Harris, M.D., President
South Dakota State Medical Association

If you've been prescribing pentobarbital or secobarbital for insomnia, there's good reason to reconsider.

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tive ineffectiveness of pentobarbital was established after only two weeks.³ Dalmane, however, remained effective not only for 14 nights, but for 28 nights in chronic insomniacs,^{3,4} without increasing dosage from night to night. Prolonged administration of Dalmane is seldom necessary, but when it is, periodic blood counts and liver and kidney function tests should be performed.

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Lecture #6

SEQUELAE OF INCOMPLETE GYNECOLOGIC OPERATIONS: I. UTERINE TUBES.

by
Brooks Ranney, M.D.*

INTRODUCTION:

During an "incomplete" or conservative gynecologic operation, the operator must ascertain that all recognizable and remediable abnormalities are corrected by the procedures.¹ Postoperatively, the patient must be advised that periodic pelvic examinations of all remaining pelvic organs are very important to her future health.²

If the conservative procedure is performed to enhance the probability of reproduction in young women, one may conscientiously assume responsibility for a somewhat higher incidence of subsequently needed definitive gynecologic operations.^{1,3} However, if the conservative procedure interdicts subsequent reproduction, then any recognizably abnormal uterus, cervix, and tubes (all useless after sterilization) should be removed during the procedure.

If healthy ovarian tissue has a good blood supply, and one can anticipate three to five, or more, years of hormonal function, such ovaries, or portions of ovaries, may be retained.⁴

Experience, and the statistics in this paper, show that the retained uterus and cervix are, by far, the most common sites for abnormalities, which require subsequent definitive gynecologic operations.

MATERIALS AND METHODS:

This is a study of forty patients upon whom "incomplete" tubal operations were performed in various South Dakota hospitals. Subsequently, these

patients were seen by us, because of respective pelvic abnormalities which required definitive gynecologic operations. Punch cards, office records, operative reports, pathology reports, and microscopic sections have been studied.

Despite notable individual variations, these forty patients are best studied in three groups, based upon their original tubal operations.

DATA AND EVALUATION:

1. Bilateral Salpingectomy (or Salpingo-oophorectomy):

Between the years 1937-1970, 16 patients had had *both tubes* (but **not** the uterus) removed. In five patients, one or both ovaries were also removed. Eleven patients were parous; five, nulliparous. According to the patients, indications for bilateral salpingectomy included pelvic pain, swelling, tubal infection, and sterilization. At the time of bilateral salpingectomy, the youngest patient was 21; the oldest, 40; the average, 33.31 years.

Pain:

Pelvic	14
Abdominal	4
Back	2
"Dragging down"	3
Dysmenorrhea	6
Deep dyspareunia	7

Abnormal uterine bleeding:

Hypermenorrhea	3
Secondary anemia	2
Spotting and irregular bleeding	6

Table I

Subsequent Symptoms
After Prior Bilateral Salpingectomy
(16 Patients)

*Department of Obstetrics & Gynecology, University of South Dakota School of Medicine.
Address: The Yankton Clinic, 400 Park, Yankton, South Dakota 57078.

Tubes:	
Endosalpingosis	12
Uterus:	
Descensus	2
Fibroids	10
Adenomyosis	4
Hypertrophy	7
Endometrial polyp	3
Cystic hyperplasia	3
Adenomatous hyperplasia	1
Cervix:	
Laceration-cervicitis	4
Dysplasia	1
Carcinoma-in-situ	1
Vagina:	
Cystocele	1
Enterocoele	1
Rectocele	1
Ovary:	
Inflammatory cysts	8
Serous cystadenoma	1
Pelvis:	
Adhesions	14
Endometriosis	5

Table II

**Operative Findings at Subsequent Operations
After Prior Bilateral Salpingectomy
(16 Patients)**

During an interval of 2 to 26 years (average interval, 8.43 years) these 16 patients retained (8 patients) or developed (8 patients) the various symptoms listed in Table I, for which they sought gynecologic evaluation. All had one or more types of pain, and 9 had abnormal uterine bleeding.

Based upon these symptoms, upon abnormal pelvic findings, and upon indicated biopsy and curettage, definitive operations were recommended. Operative and pathologic findings are listed in Table II. Painful endosalpingosis had grown out of tubal stumps into surrounding scar in 12 patients. All 16 patients had significant uterine tumors; some had several. Two patients had symptomatic pelvic relaxations. Four patients had endometrial neoplasia. One patient had preinvasive carcinoma of the cervix, and another had severe cervical dysplasia. One ovary contained a serous cystadenoma. Five patients had significant pelvic endometriosis.

Necessary operative procedures are itemized in Table III. Probably at least 15 of these 16 operations could have been avoided if hysterectomy (of the useless uterus and cervix) and necessary supplementary procedures had been performed at the time of the original tubal operations. It was possible to retain ovarian function in one half of these patients after their second operations. None has needed a later pelvic operation.

Abdominal Total Hysterectomy	16
Lysis of Adhesions	16
Resection of Endometriosis	5
Vaginal Plasty	1
Ovarian function retained	8
Both ovaries removed	8

Table III

**Operative Procedures at Subsequent Operations
After Prior Bilateral Salpingectomy
(16 Patients)**

2. Bilateral Tubal Ligation and Uterine Suspension:

Between the years 1936-1953, eight patients had had bilateral tubal ligation, in conjunction with uterine suspension to the abdominal wall. All were parous. At the time of this initial operation, the youngest was 21; the oldest, 37; the average, 27.37 years. During the next three to thirty years, these patients retained or developed symptoms quite similar to those listed in Table I, for the salpingectomy patients. In addition, the uterine suspensions to the abdominal wall caused a **sharp, sticking, dragging-down, low abdominal pain.**

Tubes:	
Endosalpingosis	4
Hydrosalpinx	1
Uterus:	
Prolapse	3
Fibroids	6
Adenomyosis	5
Endometrial polyp	2
Cystic hyperplasia	2
Adenomatous hyperplasia	1
Cervix:	
Laceration-cervicitis	3
Vagina:	
Old laceration perineum	2
Rectocele	3
Enterocoele	3
Ovary:	
Inflammatory cyst	2
Pelvis:	
Adhesions	8

Table IV

**Operative Findings at Subsequent Operations
After Prior Bilateral Tubal Ligation & Uterine Suspension
(8 Patients)**

These patients sought gynecologic evaluation, which revealed various abnormal pelvic findings. Pathologic and operative findings are listed in Table IV. Despite the uterine suspensions, three patients had uterine prolapse, and possibly because of the suspensions, all three had large enterocoeles. All patients had significant uterine tumors; some had several; three had endometrial neoplasia. It is noteworthy that four of these patients had painful endosalpingosis growing from the cornual ends of

their tubal ligations.

Necessary, definitive operative procedures are listed in Table V. All of these second operations could have been avoided if the useless cervix and uterus had been removed during the original operation, and if indicated supplementary procedures had been performed. During these second pelvic operations, it was possible to retain ovarian function in four patients. It is well that the last of these tubal ligation-uterine suspension operations, recorded here, was performed in 1953.

Abdominal Total Hysterectomy	7
Vaginal Hysterectomy	1
Vaginal Plasty	3
Lysis of Adhesions	7
Ovarian function retained	4
Both ovaries removed	4

Table V

Operative Procedures at Subsequent Operations
After Prior Bilateral Tubal Ligation
and Uterine Suspension
(8 Patients)

3. Bilateral Tubal Ligation (or Coagulation):

During the 1970's many mature couples have sought to control their family size by sterilization. In some instances the male has chosen the simpler vas ligation. In other instances the female has chosen the more complicated, intra-abdominal tubal ligation, coagulation, or clipping. Such choices should be made by the informed couples **only after careful gynecologic evaluation** to rule out present or potential pelvic abnormalities in the female. This is illustrated by the third group of "incomplete" tubal operations.

Starting since 1962, but **all except three patients, since 1972**, 16 patients had had tubal sterilization (13-tubal ligation; 3-tubal coagulation). All were parous. One ligation was associated with section, and one was postpartum, but 14 were "interval" sterilizations. At the time of these initial operations, these patients' ages ranged from 24 to 44 (average age, 33.31 years).

Pain:	
Pelvic	9
Abdominal	6
Back	9
"Dragging down"	6
Dysmenorrhea	6
Deep dyspareunia	6

Abnormal Uterine Bleeding	
Hypermenorrhea	12
Secondary anemia	6
Spotting and irregular bleeding	7

Table VI

Subsequent Symptoms,
Within 1 to 5 Years
After Prior Tubal Ligation (or Coagulation)
(16 Patients)

Within one to five years (average 2.5 years), after these initial tubal sterilizations, each of these 16 women sought gynecologic evaluation because of symptoms listed in Table VI. All had excessive or abnormal uterine bleeding, and all had one or more types of severe pelvic discomfort. In 12 of these patients, the onset of these symptoms was well **before** their initial tubal operations. Four had developed symptoms during the intervening year or two.

Tubes:	
Endosalpingosis	12
Uterus:	
Descensus	5
Prolapse	1
Fibroids	2
Adenomyosis	3
Hypertrophy	9
Endometrial polyp	2
Cervix:	
Laceration-cervicitis	4
Dysplasia	3
Vagina:	
Cystocele	2
Enterocoele	1
Rectocele	7
Ovary:	
Serous cystadenoma	1
Endometriosis	1
Thecoma	1
Pelvis:	
Adhesions	9
Endometriosis	2
Pelvic hernia	2
Paramesonephric cyst	2

Table VII

Operative Findings at Subsequent Operations
Within 1 to 5 Years
After Prior Tubal Ligation (or Coagulation)
(16 Patients)

Abdominal Total Hysterectomy	15
Vaginal Hysterectomy	1
Vaginal Plasty	7
Lysis of Adhesions	9
Resection of Endometriosis	2
Resection of Paramesonephric Cyst	1
Repair of Pelvic Hernias	2
Ovarian function retained	14
Both ovaries removed	2

Table VIII

Operative Procedures at Subsequent Operations
Within 1 to 5 Years
After Prior Tubal Ligation (or Coagulation)
(16 Patients)

Based upon these symptoms, upon pelvic findings, and upon indicated biopsy and curettage, definitive gynecologic operations were recommended. The operative and pathologic findings are listed in Table VII. All 16 patients had significant uterine ab-

normalities; some had two! Seven patients had symptomatic pelvic relaxations, left over from child-bearing. Three patients had cervical dysplasia. Another 3 had pathologic ovarian cysts or tumors. Pelvic adhesions, endometriosis, hernias, or paramesonephric duct cysts were present in 14 patients. Twelve of the 16 patients had grossly recognizable, probably painful endosalpingiosis of the cornual stumps (Figure 1).

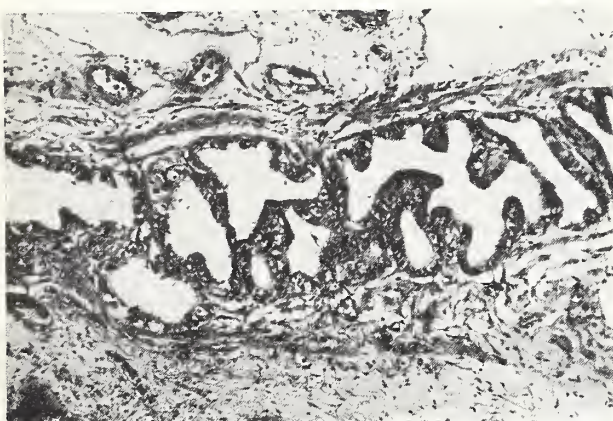


Figure 1

Endosalpingiosis, found in cornual stump of uterine tube one year after tubal coagulation. Note typical endosalpingeal mucosa in glands and nests, surrounded by vascular scar and connective tissues.

These problems were treated by the definitive operative procedures listed in Table VIII. These patients are now free of their pelvic symptoms. In fourteen of these young women, good ovarian hormonal function could be retained. None has needed a later pelvic operation.

During the first four months of 1978, it has been necessary for us to perform similar, definitive, gynecologic operations on six other patients (not reported here) within relatively short intervals of months or years after recent tubal ligation or coagulation. In all six of these patients, pelvic symptoms or findings had been noted before, or at the time of sterilization, and persisted until relieved by the second operation.

COMMENTS:

Ovaries have two functions for women. They produce female hormones which are important to a woman's health and well-being. Also, they produce mature ova. However, even when reproductive function is no longer desired by the patient and her husband, the results of ovarian hormonal function are still of great importance to the patient (and to her husband), so long as a healthy, functioning ovary has an adequate blood supply.

Conversely, the tubes, uterus, and cervix have only one known function—to transport and nurture the sperm, the fertilized ovum, and the fetus—that

is, reproduction. Therefore, if an operation is planned which will merely interdict reproduction in a woman (or in her husband) the gynecologist should first carefully study and examine the woman to ascertain that she will not need a major pelvic operation, now, or within a reasonable span of years. If there is evidence that such an operation will be needed, a sterilization procedure for either wife or husband would be redundant and unnecessary, and hysterectomy plus indicated adnexal or vaginal operation should be performed.

A large majority of pelvic abnormalities in women will occur in the uterus or cervix. Therefore, if **both uterine tubes must be removed**—interdicting future reproduction—the potentially dangerous and now **useless uterus and cervix** should be **removed** during the same operation, and any other indicated gynecologic procedures should be performed at the same operation. Ovarian tissue may be retained in some patients, to produce continuing hormonal function.⁴ However, in any patients who must have **both ovaries removed**, then the **cervix and uterus** should also be **removed**.

Permanent sterilization (vas ligation for the husband, or tubal ligation, coagulation, or clipping for the wife) will, with rare exceptions,⁵ provide excellent, and convenient control of reproduction for many mature couples. However, in addition to **first ascertaining**, (1) that there are no recognizable pelvic abnormalities, and (2) that the useless uterus and cervix, or prior obstetric relaxations, are not likely to cause future trouble, the operator should **choose a time, and method**, and utilize **meticulous technique** so that clamp, clip, suture, coagulation or scar do not subsequently jeopardize ovarian (or testicular) blood supply—which may cause modification or failure of hormonal function. In women such modification of hormones can cause annoying spotting, irregular bleeding, or incapacitating hypermenorrhea with secondary anemia.

Significantly painful endosalpingiosis, growing out from the cornual stumps of amputated, ligated or coagulated tubes, is a potential secondary hazard. In 1928, Sampson⁶ wrote, "Post-salpingectomy endometriosis usually arises from sprouts growing out from the traumatized mucosa of the tubal stump. These sprouts may invade not only the wall of the tube, but also the uterine cornu and any structure adjacent or adherent to the stump, such as the tissues of the broad ligament, the ovaries, and even the abdominal wall." "The misplaced tubal mucosa in these lesions at times retains its original structure, and at times assumes both the structure and function of uterine mucosa . . ."

Among the 40 patients reported in this study, 28

EARLY ENDOSALPINGIOSIS
4 MONTHS
AFTER TUBAL COAGULATION

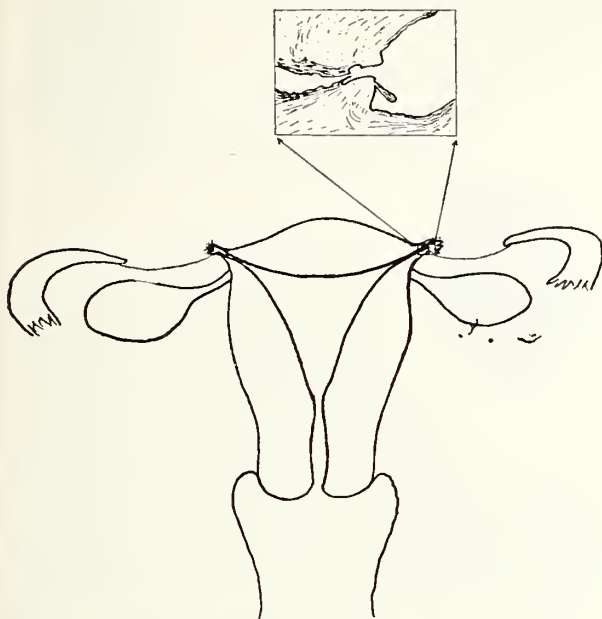


Figure 2

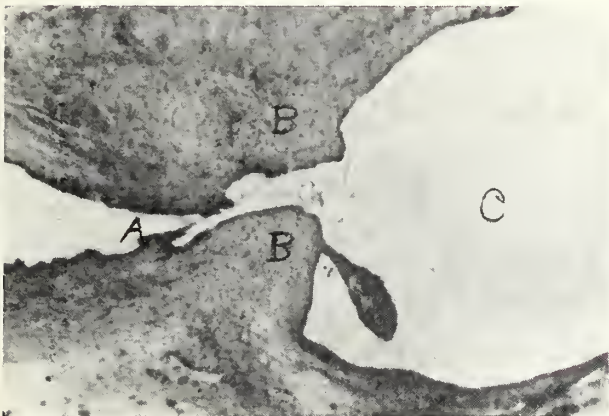


Figure 2,a.

Figure 2. This frontal diagram of pelvic organs shows cornual portions of tubal stumps where grossly visible endosalpingiosis had developed within four months after prior tubal coagulation.

Figure 2,a. This low-power microphotograph demonstrates confluence of endosalpinx from the tubal lumen (A) into an early cystic space of endosalpingiosis (C). The stippled areas (B) represent residual scar from healing of prior coagulation.

had notable endosalpingiosis. Early endosalpingiosis occurring only 4 months after tubal coagulation was grossly visible, and is demonstrated diagrammatically in Figure 2, and microscopically in Figure 2,a. Severe endosalpingiosis developed in another patient between the right cornual stump and the abdominal

wall, and caused persisting pain for 8 years after tubal ligation. Figure 3 shows a diagram of operative findings, and Figure 3,a. shows a microscopic view of this proliferative disease.

SEVERE ENDOSALPINGIOSIS
WITH PAINFUL ADHESIONS
TO ABDOMINAL WALL
8 YEARS AFTER TUBAL LIGATION

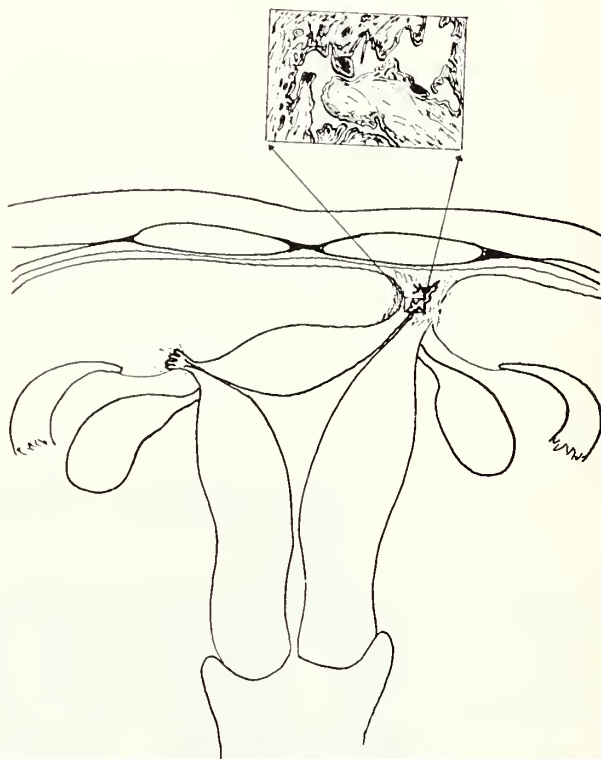


Figure 3

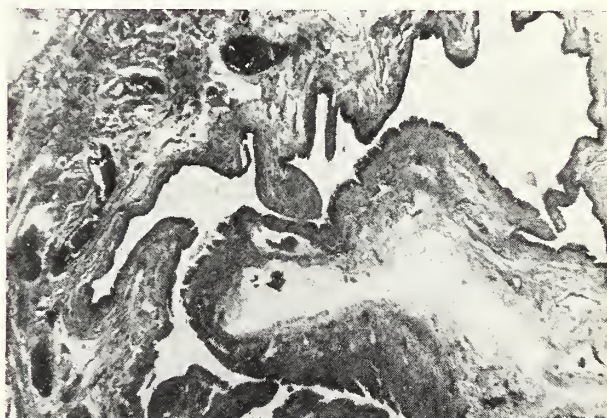


Figure 3,a.

Figure 3. This diagram shows painful endosalpingiosis which was densely adherent to the abdominal wall.

Figure 3,a. This low-power microphotograph shows a small portion of the endosalpingiosis diagrammed above.

Experience teaches that **careful wedge-resection** of the cornual portion of the tube, during salpingectomy (for tubal pregnancy), will eliminate subsequent growth of painful endosalpingosis, with rare exceptions.⁷ At least, theoretically, if one ligates, clips, or coagulates a tube far enough laterally, away from the potentially active cornual region, then there should be less tendency for subsequent growth of painful endosalpingosis. These are practical points of technique to keep in mind during indicated or elective, "incomplete" operations of the uterine tubes.

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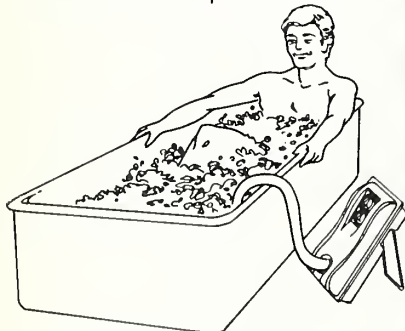
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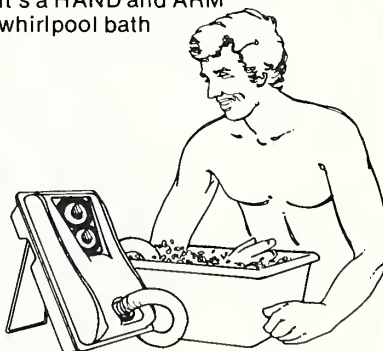
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SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105



LEGISLATIVE HELP

Senate Bill No. 106—passed by the 1978 South Dakota Legislature.

ENTITLED, An Act to recognize primary care physician residency programs in South Dakota and make an appropriation therefor.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF SOUTH DAKOTA:

Section 1. There is hereby appropriated to the state board of regents out of any money in the state treasury, not otherwise appropriated, the sum of two hundred fifty thousand dollars (\$250,000), or so much thereof as may be necessary, to be granted upon application by such residency program or programs to the medical school at the university of South Dakota. This appropriation shall provide assistance to existing primary care residency programs and further development and expansion of additional programs in primary care.

Section 2. For the purposes of this Act "primary care" shall include family practice, internal medicine, pediatrics, and obstetrics/gynecology.

Section 3. The funds appropriated in section 1 of this Act shall be paid on warrants drawn by the state auditor on vouchers approved by the dean of the medical school at the university of South Dakota. A complete accounting of expenditures of these funds shall be submitted by the subgrantees to the dean of the university of South Dakota medical school within thirty days of the end of the fiscal year in which the funds are granted.

Section 4. The granting of funds appropriated by section 1 of this Act shall be distributed to the primary care specialty programs and general surgery in the following proportions:

- (1) Family practice, not less than sixty-five percent;
- (2) Internal medicine, ten percent;
- (3) Obstetrics/gynecology, ten percent;
- (4) General surgery, ten percent;
- (5) Study, evaluation, and development of new programs to meet the physician manpower requirements of the state, five percent.

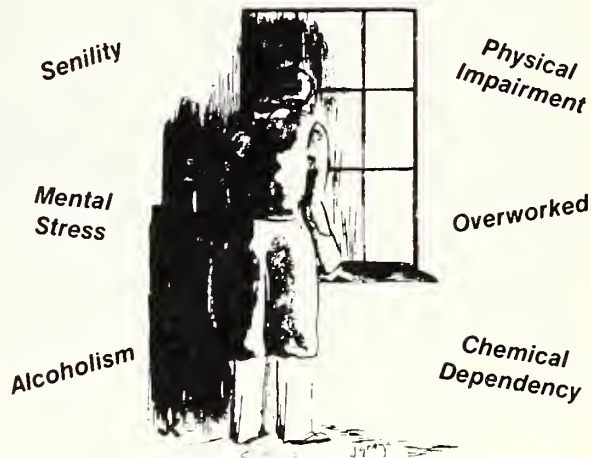
Section 5. The dean of the university of South Dakota medical school shall appoint a ten-member advisory committee to assist him in the review and approval of residency program applications for funding under this Act. This committee may have the responsibility to study and make recommendations to the dean regarding the quality of existing programs, and further development and expansion of residency programs commensurate with the physician manpower needs of the state. The membership of this committee shall be broadly representative of the medical profession and hospitals in the state.

Section 6. Moneys granted in accordance with the provisions of this Act may only be granted to support residency

programs that have a minimum of thirty percent of their residency positions occupied by graduates of the school of medicine at the university of South Dakota or for persons who were legal residents of the state of South Dakota prior to their attending an out-of-state medical school.

DISABLED DOCTOR

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E. J. BATT, M.D. DIES

Ed Batt, Associate Professor, Department of Community and Family Medicine, USDSM, died unexpectedly of a coronary occlusion April 16, 1978. Dr. Batt, a family physician who practiced in Sisseton from 1956-1976, joined the medical school faculty in a full time position in 1976. He is survived by his wife, Anne, and twelve children. A memorial award will be developed and information circulated.

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CLINICOPATHOLOGICAL CONFERENCE

From the Intern and Resident Teaching Conferences at the Sioux Valley Hospital, conducted by the Department of Pathology of the Hospital and of the School of Medicine of the University of South Dakota



EIGHTY YEAR OLD FARMER WITH A LONG HISTORY OF SKIN DISORDER AND DIARRHEA

M. W. Borke, M.D.*
J. D. Barker, Jr., M.D. **
Discussers

John F. Barlow, M.D., FCAP***
Pathologist-Editor

Case No. 715277

This 80-year-old retired farmer was admitted to Sioux Valley Hospital with chief complaints of a chronic skin disorder and long standing diarrhea.

The patient had dermatitis herpetiformis for over 20 years, well controlled with sulfonamide therapy. The patient had been evaluated for this diarrhea 20 years prior to this admission. The diagnosis at that time was "sprue anemia" treated with a diet of bananas, toast and water. This treatment did decrease his diarrhea but he soon reverted to a regular diet. Subsequently he suffered periodically from diarrhea; the stools being greasy, yellow, foul-smelling and hard to flush. He had obtained some relief with paregoric and kapectate. Approximately one month prior to admission, he noted that drinking milk produced bloating, gas, and abdominal cramps. Two of the patient's daughters had similar complaints but had not been evaluated. The patient had had no other significant illnesses.

PHYSICAL EXAMINATION: Temperature 97.2°F, pulse 76/minute and regular, respirations 18/minute and regular, blood pressure 146 systolic and 100 diastolic, height 5 ft. 7 in., weight 152 lbs. The patient was an elderly, well-preserved gentleman with numerous facial actinic keratoses. Examination of the head and neck was unremarkable. The lungs were clear to percussion, but there were a few rales at the left base on deep inspiration. Cardiac examination demonstrated a grade III (six grades) systolic murmur over the entire precordium without radiation. There were no gallops or extra sounds. Examination of the abdomen revealed a palpable liver which was non-tender and 8 cm. in percussable height. The spleen was not palpable. The remainder of the physical examination was unremarkable.

LABORATORY DATA: Urinalysis—normal, hemoglobin 11.0 gms/dl, red count 4.77 million/mm³, hematocrit 33 vols/dl, mean corpuscular hemoglobin 23 (normal 26-33)

micromicrograms, mean corpuscular volume 71 cubic micra, (normal 82-97), mean corpuscular hemoglobin concentration 33% (normal 31-37), total leukocyte count 5700/mm³, with 55% segmented neutrophils, 1% neutrophilic bands, 2% eosinophils, 38% normal lymphocytes, and 4% monocytes. There was moderate anisocytosis and poikilocytosis of the red blood cells. Platelet count was 315,000/mm³, protrombin time was 12 seconds, with a 12.5 second control, partial thromboplastin time was 32 seconds, with 33 second control, serum carotene was 30 micrograms/dl, (normal 100-300 mgs/dl), calcium was 8.1 mg/dl, (normal 8.4-10.7 mgs/dl), lactic dehydrogenase, alkaline phosphatase, aspartate aminotransferase, total bilirubin, total protein, inorganic phosphorus, glucose, blood urea nitrogen, creatinine, uric acid, cholesterol were within normal limits. Total serum iron was 29 micromicrograms/dl, (normal 50-180 mgs/dl), iron binding capacity 358 mgs/dl (normal 200-400 mgs/dl), percent saturation was 8% (normal 20-44%). Two stool tests for occult blood were positive by guaiac; magnesium was 1.8 meq/L (normal 1.6 to 2.3 meq/L); a d-xylose absorption test showed 1.1 gm urinary excretion in 5 hours (normal 4.1 to 8.2 gms); plasma d-xylose at ½ hour was 12 mgs/dl and 1 hour 14 mgs (normal 30-40 mgs/dl), lactose tolerance test showed a fasting level of 92 mgs/dl with the maximum rise occurring at 90 minutes to 103 mgs/dl. The patient experienced cramps, bloating, and diarrhea during the lactose tolerance test. Electrocardiogram showed right bundle branch block and left axis deviation with a bifascicular block. A chest film revealed a borderline enlarged heart. The radiographic small bowel series was abnormal. A diagnostic procedure was performed.

DR. BORKE: In summary, we have an 80-year old retired farmer with a 20 year history of diarrhea, possible malabsorption, normal weight, decreased serum calcium, markedly decreased d-xylose absorption, abnormal lactose tolerance test, and depressed serum iron studies. The patient had a diagnosis of dermatitis herpetiformis (DH) which is associated with gluten enteropathy in 90 to 95% of the cases if multiple biopsies of the small bowel are taken. In sprue there is a characteristic loss of the villus pattern, abnormal surface epithelium, and chronic inflammatory infiltrate in the lamina propria of the

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Supported in part by Clinical Cancer Training Grant T12 CA 08032 from the National Cancer Institute of the National Institute of Health U.S. Public Health Service.

small bowel. The malabsorption syndrome associated with DH is usually milder than the malabsorption in cases of sprue not associated with this skin disorder.

In DH IgA is deposited in the skin. The disease responds to certain sulfonamides but there is a 20% error in diagnosis if one depends on the response of the disease to this therapy.

This patient certainly has a disease consistent with celiac sprue. The severity of this condition varies greatly. It is thought to be inherited as a dominant gene since there is a definite increased incidence in siblings. There is a correlation with the presence of the histocompatibility antigen, HLA-A8, in 90-95% of cases of this disease. The usual criteria for the diagnosis of celiac sprue are chemical and clinical evidence of malabsorption, abnormal small bowel biopsy as described above, and response of the disease to a gluten free diet. Patients who have this disease for extended periods of time are at an increased risk of developing a malignant small bowel lymphoma.

The patient is only 5'7" tall. Short stature is common in celiac sprue. The abnormal d-xylose test, the iron deficiency anemia probably due to malabsorption of iron, and the poor absorption of lactose demonstrated with the abnormal lactose tolerance test are all compatible with sprue. I cannot explain the cardiomegaly or cardiac murmurs.

It is possible the patient may have developed a lymphoma of the bowel as a complication of sprue. Lymphomas of the bowel can be divided into several categories. There is a primary lymphoma of the bowel which usually occurs in younger patients. There is a form of lymphoma of the bowel seen in patients from the Middle East. This form is associated with alpha heavy chain disease. Lastly a generalized lymphoma may involve the bowel as a secondary site. The form of abdominal lymphoma usually associated with diarrhea is the diffuse primary type. There is usually associated abdominal pain and fever. Biopsy in these cases of primary diffuse intestinal lymphoma can be confused with sprue.

I should consider briefly some common conditions in the long list of the differential diagnoses of malabsorption. Amyloidosis can cause malabsorption. Seventy percent of patients with systemic amyloidosis have involvement of the bowel. Steatorrhea and lactose intolerance are rare presentations of amyloidosis.

Decreased bile salt excretion into the gastrointestinal tract can produce steatorrhea. Diffuse liver disease can limit bile salt production but the normal liver function tests make this unlikely. Bacterial overgrowth in the blind loop syndrome can be as-

sociated with malabsorption and macrocytic anemia.

Any cause of lymphatic obstruction to the bowel can produce malabsorption. Whipple's disease with diffuse bowel involvement can produce malabsorption. Intestinal lymphangiectasia usually causes protein losing enteropathy rather than steatorrhea. Radiation enteritis may cause malabsorption and iron deficiency. This patient had no history of radiation treatment in the past. Eosinophilic gastroenteritis can cause malabsorption but is usually associated with peripheral blood eosinophilia which was not present in this case. Eosinophilic gastroenteritis may present as gastric outlet obstruction or even iron deficiency anemia. Sclerodema may lead to malabsorption but there are no findings in this case to indicate this diagnosis. Malabsorption may also occur secondary to certain drugs such as neomycin. Regional enteritis can produce malabsorption with excessive loss of bile salts. This patient had no abdominal pain or peripheral signs suggesting Crohn's disease such as arthritis or iritis. Another disorder which may cause malabsorption is the carcinoid syndrome but these patients usually present with cutaneous flushing and hypertension. There was no evidence of these symptoms in this case.

In conclusion, the association of dermatitis herpetiformis with long standing diarrhea certainly suggests idiopathic steatorrhea or celiac sprue. This patient has had the disease for a long time and may have developed a secondary lymphoma as a complication.

DR. BORKE'S DIAGNOSIS

Idiopathic steatorrhea (celiac sprue) with possible secondary lymphoma

DR. BARKER: Since the differential diagnosis of malabsorption is so lengthy, I decided to limit my remarks to sprue, the disease state this gentleman has. The association of dermatitis herpetiformis (DH) and gastrointestinal symptoms of diarrhea and weight loss made the diagnosis of sprue relatively easy in this case.

The skin rash of DH to a non-dermatologist is not that characteristic. The clinical tip off is the intense pruritus. I believe this is the disease that has been called the seven year itch. Groups of intensely pruritic papules or vesicles are found on extensor surfaces. As Dr. Borke has pointed out, sprue associated with DH is usually less severe than cases of sprue without skin disease. Both sprue and DH are thought to have similar immunologic defects. DH patients can have deposits of IgA within the skin as well as an antireticulum antibody in the serum. Both

were demonstrated in this patient.

I should point out that the majority of patients with sprue do not have DH. Because of the patchy nature of the disease in patients with DH, multiple biopsies of the small bowel may be necessary to document sprue. One study has shown that if patients with DH were given diets very high in gluten, the symptoms and pathologic picture of sprue would be unmasked. The sulfones, which are used to alleviate the symptoms of DH have no effect on the associated sprue. However, if you place somebody with DH on a gluten free diet, the DH may improve.

This patient's history plus these characteristic x-rays nearly confirmed the diagnosis of sprue. (Figs. 1, 2) I think it is a good idea for each of us to read our own films. The findings of sprue can easily be overlooked. One should, at least, question the radiologist as to the possibility of sprue. Figure 1 demonstrates dilatation of the small bowel lumen and thinning of the folds of the bowel wall, both characteristic of sprue. In amyloidosis or Whipple's disease these folds become very thickened. One also notices that the barium has a tendency to flocculate. (Fig. 2) In some of the films one can see what is called the moulage sign which is sort of a molded, waxy appearance to the barium filled small bowel. (Fig. 2)

The flat plate of the abdomen in some of these patients can simulate intestinal obstruction because of the marked dilatation of the small bowel. The flocculation of the barium has something to do with the increased small bowel secretions which make the barium alter its character and become separated. One does have to be careful as some of the older preparations of barium can produce this effect in the absence of sprue. This is not seen with the barium solutions used by most radiologists today.

Sprue commonly presents in subtle manners. The patient may not have diarrhea or, if present, the diarrhea may vary in severity from completely debilitating to just one mammoth stool per day. The stools of sprue patients are similar to those of other causes of steatorrhea—foul and rancid. This makes a 72 hour collection stool specimen, the critical diagnostic test for steatorrhea, an unpleasant task. There was a friend of mine who practiced gastroenterology in New York City. He asked a patient to collect the 72 hour stool collection on an out-patient basis. She returned twice saying that her family could not tolerate the unpleasant odor. However, on the third try she was successful. When asked how she completed her task, she replied that she had rented a locker at Grand Central Station.



Figure 1
Small bowel from gastrointestinal series showing narrow small intestinal folds and dilatation of the small bowel.



Figure 2
Flocculation of barium in small bowel and smooth margins of barium in bowel in some areas—"moulage sign".

The cause of the diarrhea in sprue is not entirely due to the malabsorption. Dietary fat not absorbed can be acted upon by colonic bacteria producing fatty acids. One of these fatty acids is ricinoleic acid, the active ingredient of castor oil.

In addition to bowel symptoms, the patient may present with some subtle effects of malabsorption. In a child this may be manifested by growth failure. Dr. Borke pointed out that many patients with this

disease are short statured. The reason for this is that the malabsorption often starts in the growing years, becomes subclinical in adolescent years and then reappears in adulthood. I remember one lady with sprue who was 5'2". Everyone else in her family including her sisters and mother were over 6 feet tall. This patient had fairly severe disease as a child which went unrecognized.

Poor absorption of a number of specific compounds can by themselves cause symptoms. Malabsorption of vitamin A can produce hyperkeratosis or folliculitis of the skin. Failure of absorption of vitamin K may cause elevation of the prothrombin time and a bleeding tendency. Inability to absorb vitamin D may be manifested by bone pain, fractures, or collapse of vertebrae due to osteomalacia. Hypocalcemia and tetany may occur. Since iron is absorbed in the upper small bowel, the area most affected by sprue, iron deficiency anemia is not uncommon as a way for sprue to present.

Occasionally sprue may be unmasked by a surgical procedure. A number of years ago a syndrome called postvagotomy sprue was described. These patients either had a vagotomy and pyloroplasty or a partial gastrectomy. This caused the rapid delivery of large amounts of stomach contents into the small bowel. The small bowel, which prior to surgery was only marginally competent for fat absorption, now could not meet the challenge of the increased amount of fat delivered to it after the surgical procedure. Malabsorption resulted.

I would like to make some comments about the laboratory aspects of the diagnosis. Qualitative stool fats are not very helpful. If you are going to use this test, you should realize there is a difference between malabsorption and maldigestion. Both malabsorption and maldigestion produce steatorrhea. The classic case of malabsorption is sprue where there is mucosal disease. The classic defect in maldigestion is pancreatic insufficiency. The pancreas fails to secrete enough digestive enzymes. When maldigestion occurs, neutral fat is present in the stool and microscopically visible when stained with alcoholic sudan IV. Neutral fat indicates no fat digestion by pancreatic enzymes. The qualitative stain for stool fat in sprue is negative for neutral fat. Fatty acids are present in the stools of sprue patients because the fat has been acted upon and partially digested by pancreatic enzymes, but the fatty acids cannot be absorbed due to the mucosal defect. Fatty acids are detected by sudan stain after heating the stool in acid.

The d-xylose test is excellent for malabsorption screening. It was abnormal in this patient. Quantitative urine tests for 5-hydroxyindolacetic acid (5-HIAA), which are elevated in the carcinoid syn-

drome, are often slightly elevated in cases of sprue. The abnormal excretion of 5-HIAA in sprue is probably due to malabsorption of vitamin B6 (pyridoxine). Deficiency of this compound alters tryptophan metabolism so that more 5-HIAA appears in the urine.

The best test to prove malabsorption is the 72 hour collection of stool fat. The patient should be placed on a high fat diet to maximize the amount of fat put out in the stool. More than five to seven grams of fat per day is abnormal.

The small bowel biopsy is the most direct and certain means of documenting the diagnosis of sprue. Normal small bowel mucosa contains finger-like projections called villi projecting above the crypt cells at the base of the mucosa. (Fig. 3). There are

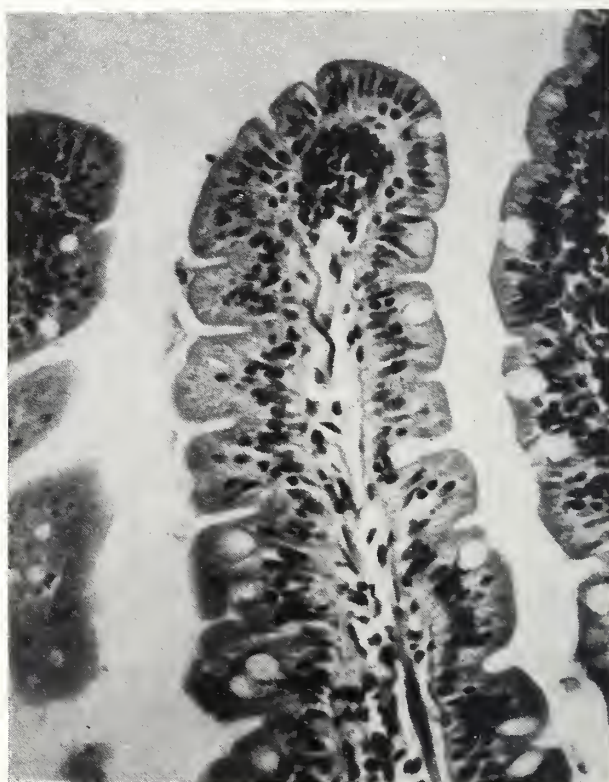


Figure 3

Tall villus with goblet and absorptive cells in normal small bowel mucosa.

very few inflammatory cells in the mucosa or within the lamina propria. On the surface of the villus absorptive cells electron microscopy can demonstrate finger-like microvilli. On top of these microvilli is a fuzzy coat of glycoprotein secreted by the absorptive cells. In sprue this normal histology is altered. A flat mucosa with no villi results. (Fig. 4) The earliest change detectable in sprue is that the absorptive cells fail to secrete the normal fuzzy coat of glycoprotein. This fuzzy coat is sticky and allows pancreatic enzymes and other digestive enzymes to stick to the absorptive cell surface and aid in the digestion

and absorption. All of the disaccharidases necessary for splitting carbohydrates are located in this fuzzy coat. This fuzzy layer is also the zone where specific binding receptors are located such as those for vitamin B12 and calcium.

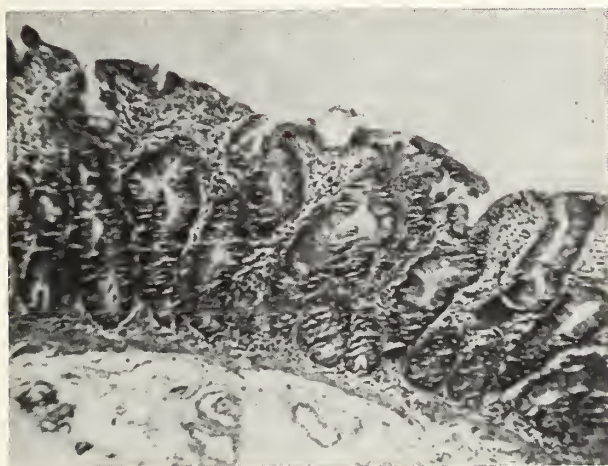


Figure 4

Typical small bowel biopsy with loss of villi and inflammatory infiltrate in lamina propria of mucosa in sprue.

The next pathologic change noted by the electron microscopist is fusing, clubbing, and finally disappearance of the microvilli. Next, changes start to occur in the small bowel mucosa which can be recognized by light microscopy. This small bowel biopsy from our patient (Fig. 4) shows complete loss of the villus pattern and a marked increase in inflammatory cells in the lamina propria. Many of these inflammatory cells are plasma cells. The biopsy is flat but the mucosa is not thin because there is a marked hypertrophy of the crypt cells. In small bowel mucosa all production of new cells occurs within these crypts. But crypt cells are secretory cells. As these new cells age they gradually creep up on the villus surface and become absorptive cells. The majority of cells located in the crypts are secretory cells. These are the cells activated by cholera toxin to cause the secretory diarrhea of cholera. In sprue we have an inability of the small bowel secretory cells to become absorptive cells. Consequently, you have a fair number of secretory cells in the small bowel mucosa. This contributes to the diarrhea in these patients.

The cause of sprue is not known. But why should we try to find the cause of sprue if we already have adequate treatment? If the exact etiology of sprue is discovered, we will know much more about the immunologic mechanisms of the gut. These are poorly understood at the present time. It is known that in sprue there is a toxic effect of gluten, the protein fraction of flour, on the small bowel. Within the gluten protein fraction of flour is gliadin, the toxic

soluble fraction of gluten. If you break down gliadin into its component amino acids and feed it to a sprue patient, there is no toxic effect.

It was felt some years ago that patients with sprue had an enzyme deficiency which made it impossible for them to hydrolyze gluten. Therefore, the toxic gluten would remain on the surface of the bowel. This theory has not been proven and is probably incorrect.

Dr. Borke mentioned the most popular immunologic theory explaining the pathogenesis of sprue. Eighty percent of sprue patients have a similar tissue antigen called HLA-A8 as compared to 20% of normal population. About 70% of patients with dermatitis herpetiformis (DH) also have this particular histocompatibility or tissue antigen. In contrast, patients with DH but no associated sprue have a 20% incidence of the HLA-A8 antigen—the same as the general population. These facts have given rise to the binding hypothesis of sprue which states that the HLA antigen is complexed with another gene which produces some defect causing gliadin to stick on the intestinal mucosa. This second gene associated with the histocompatibility gene brings about an immunologic reaction to the gliadin resulting in sprue.

The treatment of sprue is simple. You place the patient on a gluten free diet. This diet is very difficult to follow especially at the present time when we have so many processed foods. A gluten free diet eliminates wheat, barley, rye and oats. The only grains the patient can eat are corn, soy flour and rice. In addition to gluten, patients with sprue should initially eliminate lactose. Lactose is one of the first enzymes to disappear in sprue. The patient may have to be on a gluten free diet for sometime before they can tolerate lactose. As I suggested above, lactose is in the fuzzy coat and disappears early. The patient we are discussing today certainly demonstrated lactose intolerance.

It may take a patient several months to respond to a gluten free diet. Some patients never respond at all. These patients may have a much stronger immunologic reaction to the gluten. Occasionally high doses of steroids will help these people possibly by blocking the immunologic mechanism present in sprue. We thought we had a patient unresponsive to a gluten free diet in Iowa and readmitted her to the hospital. We came on rounds one morning and found her sitting up in bed eating cream of wheat.

What happens to people with sprue? They usually remain on the diet and do very well. I remember a patient we saw in the service who was 6'1" tall and 120 lbs. at the time of the initiation of his diet. He gained 70 lbs. in a few months.

After patients have sprue for 20 to 30 years, there is an increased incidence of small bowel lymphoma. When a patient, who has been well maintained on a gluten-free diet over a period of years, develops increasing gastrointestinal symptoms, one should be sure a malignant lymphoma of the small bowel has not developed.

What is the course of untreated sprue? For unknown reasons it is a course of intermittent exacerbations and remissions. Patients may not be symptomatic at all times. Characteristically children may develop severe symptoms of sprue but then become asymptomatic during the adolescent years only to develop severe symptoms again as adults. Symptoms may wax and wane. This is perhaps why many of the cases of sprue are not diagnosed and are labelled with such diagnoses as irritable bowel syndrome. I think the disease is more common than appreciated in the United States. Certainly the disease is more common in England. Perhaps the English look for it harder than we do.

DR. BARLOW: I cannot add much to this very excellent discussion of sprue. I do want to emphasize that the diagnosis and treatment of this disease can result in marked alleviation of symptoms on a gluten free diet. Considerable clinical suspicion and relatively simple x-ray and laboratory tests are an indication for small bowel biopsy. We have had several patients here who have profited very well from treatment. One patient previously reported in this Journal was over 6 feet and weighed under 110 pounds at the time of diagnosis and gained over 70 pounds with marked relief of symptoms on a gluten free diet.

*DR. W. O. ROSSING: Dr. Borke, how do you explain the MCV of 71 and what do you think could produce watery foul smelling diarrhea in the patient who had returned with symptoms after being on a skiing or a hunting trip and drinking perhaps out of mountain streams.

DR. BORKE: The answer to the second question would be that such a patient would have giardiasis. As for the MCV for 71, I suppose that iron deficiency anemia secondary to malabsorption could produce that degree of microcytosis.

DR. BARKER: Yes, I think that the patient well might have iron deficiency as sprue involves the proximal small bowel, the area where iron is ab-

sorbed. I think that the protocol may be referring to anemia refractory to oral iron when they referred to this patient having "sprue anemia". The diagnosis was probably made in a day before sprue was well understood. Certainly the patient was not on a gluten free diet as he was eating toast.

**DR. DENNIS FOSTER: How do you explain the positive stool guaiac?

DR. BARKER: I can't. However, the patient cannot have been bleeding too severely. One of the reasons I wanted this case presented at this time was that I planned to have the patient return for a repeat small bowel biopsy to demonstrate the regression of the changes of sprue on a gluten free diet. The patient is relatively symptom free and elects not to have a repeat small bowel biopsy.

***DR. JAMES A. OAKLAND: Could you discuss the biopsy technique? Do you need multiple biopsies?

DR. BARKER: No, I do not feel you need multiple biopsies in most cases. There is a multiple biopsy device which can easily obtain the biopsies without extracting the device. However, this is quite elaborate and has the increased risk of a small bowel perforation. The biopsy should be made near the ligament of Treitz in the proximal small bowel where sprue is most severe.

DR. OAKLAND: Are there false positive and negative biopsies?

DR. BARKER: If you biopsy in the proximal small bowel, it is unlikely. Biopsy of the duodenum can show changes of broad villi which are difficult to interpret. Patients can have patchy small bowel disease but they only have minimal symptoms.

DR. ROSSING: In the lactose tolerance test which do you think is more important; the failure of the blood sugar to rise appropriately or the fact the patient has symptoms when given lactose?

DR. BARKER: I feel that they are both important. There are better tests available for lactase deficiency but they are not practical. One can measure the lactase content of the small bowel biopsy specimen but the specimen has to be carefully weighed, frozen, and sent to a special laboratory. There are also absorption tests available using radioactive labels.

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Pop's Proverbs

The more "facts" I hear, the less I am sure of.

Letters To The Editor

I have just received a check in the amount of \$500, given by the South Dakota State Medical Association.

This money is definitely needed, and much appreciated.

Thank you.

Sincerely,
David J. Erk

— — —

I am pleased to have been selected as one of the recipients of the South Dakota State Medical Association Award. I am very grateful to your organization for taking an interest in the medical school and its students. I would like to thank you for your support on behalf of myself and the other students of the medical school.

The scholarship is greatly appreciated and will be used to offset the expenses of my medical education. Thank you.

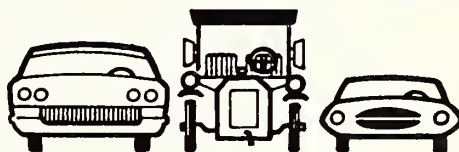
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When the red cell mass is not elevated, the cause of hematocrit elevation is often a decreased plasma volume. After obvious causes of loss of plasma such as diuretic therapy or gastrointestinal fluid loss have been ruled out, there is left a condition often called spurious, stress or benign polycythemia or Gaisbock's syndrome. Recently chronic smokers with high carbon monoxide levels have been found to have polycythemia along with other symptoms such as headache or inability to concentrate. Since cessation of smoking is followed by reversion of the laboratory values to normal and disappearance of symptoms, smoking should be considered as a cause of persistent elevation of the hematocrit.

John F. Barlow, M.D.
Pathologist

Reference: J. R. Smith and S. A. Landaw: Smoker's polycythemia. *New England Journal of Medicine*, January 5, 1978.

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This Is Your Medical Association

Daniel Kennelly, M.D., Sioux Falls, spoke at a child abuse workshop during the state convention of the American Association of Medical Assistants held in Sioux Falls.

* * * *

Edward Daw, M.D., has announced the association of **Edward Anderson, M.D.** in the practice of anesthesiology in Sioux Falls. Dr. Anderson is a graduate of Georgetown University School of Medicine. He served his internship at the Great Lakes Naval Hospital and his anesthesiology residency at the National Naval Medical Center in Bethesda, Maryland. He served in the Navy for three years and practiced in Mankato, Minnesota, one year prior to locating in Sioux Falls.

* * * *

Robert Raszkowski, M.D. has joined the faculty of the USD School of Medicine in the Department of Medicine. He is a graduate of USDSM and received his M. D. degree from Temple University. Dr. Raszkowski served his internship, residency in medicine and fellowship in gastroenterology at Scott and White Memorial Hospital in Temple, Texas, prior to returning to South Dakota.

Junior high school parents in Rapid City heard **Gerti Janss, M.D.** speak on sex and sex education in the home.

* * * *

Participants in a seminar sponsored by the State Hospital Association to help hospitals develop long range plans for community health care included **James Larson, M.D.**, Watertown.

* * * *

The Whetstone Valley District Medical Society elected **L. F. Nelson, M.D.**, president, for 1978.

* * * *

Robert Van Demark, M.D., Sioux Falls, received the fourth annual Distinguished Citizen of the Year Award from the South Dakota Press Association, and the G. J. Van Heuvelen Award for Outstanding Service to Public Health from the South Dakota Public Health Association.

* * * *

Brooks Ranney, M.D., Yankton, was elected vice president of the American College of Obstetricians and Gynecologists at the annual business meeting held in Anaheim, California.

* * * *

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ENDOWMENT
FUND**

Edward J. Batt, M.D., Sioux Falls, died at age 49 on April 16. Dr. Batt graduated from the University of Buffalo School of Medicine. He was in general practice in Sisseton, South Dakota, from 1956 to 1976. At that time he became associated with the Family Practice Center and the USD School of Medicine. Dr. Batt is survived by his wife, Anne; four sons, John, James, Joseph and Daniel; eight daughters, Susan Torgelson, Catherine Zebroski, Mary Anne Millikan, Jeanne, Therese, Patricia, Margaret and Elizabeth.



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**Randy Tuffs
405 East Omaha
Rapid City
343-6755**

"Doctor Jeckel and Doctor Greed"

During March and April we suffered the last pangs of the quest for Spring and its re-enactments. Since I am usually a month behind the season, would you contemplate the end of winter with me in retrospect with the following poem I wrote on a piece of firewood while sitting by our "Favorite" brand hardwood parlor stove?

WINTER'S GATE (MARCH'S SONG)

I

Fences buried below your knees;
Fine snow stings before the breeze.
Ice upon snow and ice again;
Nothing moves about with ease.

How well we remembered
When we did wait
While Spring stood
Biding at Winter's Gate.

II

Spring harbingers, it is said,
Must wait for cues and signs not read
While Winter has its way
And the vagrancies of time delay.

How well we remembered
When we did wait
While Spring stood
Biding at Winter's Gate.

III

All day the pressing
South-sent wind
Chased the sun warmed air
From Kansas' Plains
Where snowpack thinned;
Only to be repulsed by polar air
Sending gusty March scudding
Under the relentless stern
Of Winter's stare.

How well we remembered
When we did wait
While Spring stood
Biding at Winter's Gate.

IV

March is spent in coming
In and out; keeping all astir
In her indecisive withholding of
Spring, who tried, but
Must yet recur.

How well we remembered
When we did wait
While Spring stood
Biding at Winter's Gate.

V

Was there that day,

Though March not gone,
When breeze was soft
And heralds shone?
Were there islands in the sky
Warmed by lambent sun
And hearts all light?
Did winter run?

How well we remembered
When we did wait
While Spring stood
Biding at Winter's Gate.

By now many of our countrymen are engaged in midwiving cows. So it is at the Thirteen Ranch. We happen to like the Angus cows best adding Limousin for vigor and growth.

I SPEAK TO ANGUS COWS

I talk to cows
With ponderous breast,
Considered here to be the best.
Of mothers chosen
Devoid of horn,
I think of thee ere
The calf is born.
In terms of love,
Still greater get,
With calf at side
And suckling yet

How nice you are
Your gentle eye; no nostril
Flared, no blowing
Breath, no bug-eyed blindness or
Headlong rush to
Break the moment
Sent for us.

No dog can look
Upon or sniff your babe
No barren mother in
Jealous rage can
Drive from you
Your newborn

I thank you cow
For your felicitation,
Continued zeal to
Do your best; I
Pick you out from
All the rest
To scratch your
Tail head, pinbone
And poll to tell
The world I
Love you all.

W. Odland

EXAMINE AIR FORCE MEDICINE



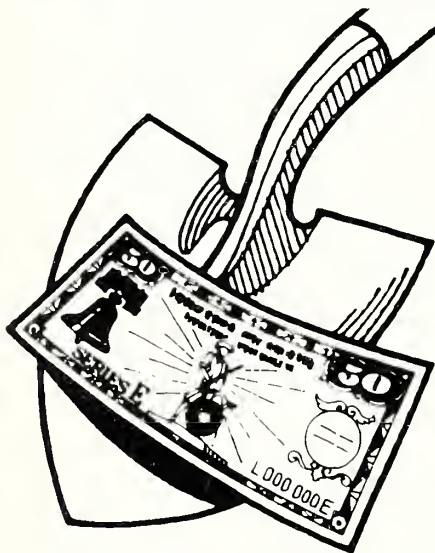
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COUNCIL MEETING MINUTES

1:30 p.m.
Friday, April 14, 1978

Howard Johnson Motor Lodge
Sioux Falls, South Dakota

The meeting was called to order by Bruce Lushbough, M.D., Chairman. Those present for roll call were Doctors James Ryan, Duane Reaney, Joseph Hamm, W. R. Taylor, G. E. Tracy, Bruce Lushbough, Winston Odland, Fred Leigh, B. C. Gerber, G. Robert Bartron, R. C. Jahraus, David Buchanan, W. O. Rossing, Durward Lang, P. K. Aspaas, John F. Barlow, Frank Messner, Robert Millea, W. E. Jones, A. J. Barrett, R. L. Stiehl, Richard Gere, and Commission Chairmen, Doctors Lawrence Finney, Howard Saylor, and Michael Rost. Guests in attendance were Robert Chloupek, M.D., J. A. Muggley, M.D., R. H. Quinn, M.D., and Karl Wegner, M.D.

Dr. Buchanan moved to dispense with the reading of the minutes of the previous meeting inasmuch as they have been published. The motion was seconded and carried.

1. REPORT OF THE COMMISSION ON MEDICAL SERVICE. Dr. Saylor, Chairman of the Commission, presented the report.

MINUTES COMMISSION ON MEDICAL SERVICE

9:30 A.M. Embassy Room II, Holiday Inn
Saturday, February 25, 1978 Sioux Falls, South Dakota

The meeting was called to order by Dr. H. L. Saylor, Jr., Chairman. Those present for roll call were Doctors H. L. Saylor, Jr., David Holzwarth, James Rud, John Hoskins, Warren Jones and Guy Tam.

It was moved, seconded and carried to dispense with the reading of the minutes of the previous meeting inasmuch as they have been published.

IMPROVED PREGNANCY OUTCOME PROGRAM. Dr. Saylor outlined this proposed program from the Department of Health, Maternal Child Health, Stanley Graven, M.D. It is a grant application requesting the assignment of National Health Service Corp physicians and other allied personnel to establish base clinics in rural areas and to provide these clinics' services to outreach areas in South Dakota.

Pros

Cons

1. Doubtful that the proposed benefits would be worth the dollars expended.
2. Duplication of services already available.
3. No assurance the medical profession will be acceptable to this plan.
4. Proposed teams are overloaded with allied health professionals, and it is doubtful they will have the desired effect on the people they are trying to reach.

Dr. Rud moved that the Commission recommend to the Council that although they recognize the intent of this proposal to provide medical care to rural areas in South Dakota, the State Medical Association cannot endorse this proposal for the reasons listed above. The motion was seconded and carried.

SIDS PROGRAM. The Commission reviewed a request from Dr. Chloupek to reconsider the proposal for the SIDS program.

Pros

Cons

1. Recognize the value of such a program for the parents and families of victims.

Dr. Jones moved that the Commission recommend to the Council that the State Medical Association endorse the proposed SIDS program with one amendment, that "all" autopsies on SIDS deaths be funded through this program rather than "some". The motion was seconded and carried.

EMERGENCY MEDICAL SERVICE PROTOCOLS FOR SUGGESTED TRANSFER AND TREATMENT PROCEDURES 1) CRITICAL TRAUMA PATIENT, 2) CRITICAL BURN PATIENT, 3) CRITICAL BEHAVIOR PATIENT, 4) CRITICAL POISON PATIENT, 5) CRITICAL CARDIAC PATIENT. Dr. Saylor briefly reviewed these protocols which have been drafted by practicing physicians and a pharmacologist in South Dakota. He stated that the Ad Hoc Committee which consists of two physicians, two Hospital Association representatives and two Nurse Association representatives, recommended changes in the protocol for critical trauma patients which would be less restricting.

Pros

Cons

1. Reviewed and approved by the Ad Hoc Committee with changes in critical trauma patient protocol.
2. Protocols allow enough latitude so as not to be obstructive or restricting.
3. Establishes some base guidelines for allied medical personnel.

Dr. Jones moved that the Commission recommend to the Council that the five protocols presented, including the amendments made by the Ad Hoc Committee for the critical trauma patient, be accepted. The motion was seconded and carried.

EMERGENCY MEDICAL SERVICE PROGRAMS GRANT APPLICATIONS (TWO). The Commission reviewed the information on these two grant applications, one to implement advanced life support in the West Region of South Dakota, and the other to study the feasibility of advanced life support in the Southeast Region of the state.

Pros

Cons

1. Federal funding could be obtained for maximum of six years; then it becomes self-supporting.
2. Necessary for overall program in South Dakota.

Dr. Holzwarth moved that the Commission recommend to the Council that the State Medical Association endorse the grant applications proposed by the Emergency Medical Services Program. The motion was seconded and carried. MEDICAL SERVICES PLAN DRAFT SUBMITTED BY THE EMERGENCY MEDICAL SERVICE DIVISION.

Pros

Cons

1. The intent is to provide good emergency medical care for all areas of South Dakota.
1. Draft was not available for distribution and review by the Commission members.

The Commission directed the executive office to obtain this draft and provide copies to the Commission member asking them to review it and return their recommendations to the state office, the majority recommendation to be sent to the Council. Dr. Saylor encouraged all Commission members to be certain that their hospitals have completed and returned the questionnaire on self-assessment for emergency services.

AMA RESOLUTION REQUESTING STATE MEDICAL ASSOCIATIONS TO OPPOSE MASS SCREENINGS OF SCHOOL CHILDREN IN FRAGMENTED ORGAN SCREENING PROGRAMS. Dr. Tam moved that the Commission recommend to the Council that the South Dakota State Medical Association endorse the AMA resolution opposing mass screening of school children. The motion was seconded and carried.

SUMMARY REPORT OF THE NATIONAL COMMISSION ON THE COST OF MEDICAL CARE. The Commission was apprised that the comprehensive report should be forthcoming from the AMA in the near future.

Dr. Rud moved that the Commission accept this summary report as a point of interest and recommend to the Council that this report be disseminated to all members of the State Medical Association along with a letter encouraging all to read the report. The motion was seconded and carried.

EPSDT-CHAP PROGRAMS. The Commission reviewed a summary of these programs provided by Dr. E. H. Heinrichs.

Pros

Cons

1. Lack of continuity in providing medical care—fragmentation.
2. Program is expensive and poorly planned.
3. Program cannot accomplish what is intended.
4. It is difficult to get physicians to comply with the present program, and the proposed program will require stricter compliance.
5. Why go from what is considered a "good program" to one which has not been proven.

Dr. Rud moved that the Commission recommend to the Council that the State Medical Association not approve the proposed program in lieu of the present program. The motion was seconded and carried.

Dr. Saylor reviewed action taken by the Council at their January meeting which would be of interest to the Commission members.

The Commission discussed with Mr. Johnson the problem of receiving information and requests for action from the Department of Health and other governmental agencies just prior to meeting dates so that the Commission members do not have adequate time to review the materials and make appropriate recommendations. It was determined that the executive office should correspond with the various department heads notifying them well in advance of Commission meetings and stating that information to be considered at those meetings must be received at least fifteen days in advance. If the material is not received in advance, the matter will be tabled or a recommendation made to oppose the request.

The meeting adjourned at 11:30 a.m.

a. Improved Pregnancy Outcome Program. Dr. Leigh moved to accept the recommendation of the Commission not to endorse this proposed program. The motion was seconded and carried.

b. SIDS Program. Dr. Tracy moved to accept the recommendation of the Commission to endorse this program with the amendment that "all" autopsies on SIDS death be funded through this program rather than "some". The motion was seconded and carried.

c. EMS Protocols. Dr. Leigh moved to accept the five protocols 1) critical trauma patient, 2) critical burn patient, 3) critical behavior patient, 4) critical poison patient, and 5) critical cardiac patient, including the amendments made by the Ad Hoc Committee. The motion was seconded and carried.

d. EMS Grant Applications. Dr. Buchanan moved to accept the recommendation of the Commission to endorse the grant applications proposed by the Emergency Medical Services Program. The motion was seconded and carried.

e. Medical Services Plan Draft. The Council received the report and directed the Commission on Medical Service to submit a recommendation to the Council at a later date following further study.

f. AMA Resolution Opposing Mass Screenings of School Children in Fragmented Organ Screening Programs. Dr. Taylor moved to accept the recommendation of the Commission that the SDSMA endorse the AMA resolution opposing mass screening of school children. The motion was seconded and carried.

g. Report of National Commission on the Cost of Medical Care. Dr. Odland moved to accept the recommendation of the Commission to disseminate this material to all members of the State Medical Association. The motion was seconded. A discussion followed wherein Dr. Leigh moved to amend the previous motion to disseminate this material to the members of the House of Delegates. The motion was seconded and carried. The motion as amended was passed.

h. EPSDT — CHAP Programs. Dr. Taylor moved the acceptance of the Commission's recommendation not to approve the proposed program in lieu of the present program. The motion was seconded and carried.

i. Dr. Saylor reviewed with the Council the problems the Commission has been having with the Department of Health and other government agencies in receiving information and requests for action just prior to meeting dates so that the Commission members do not have adequate time to review the material and make appropriate recommendations. The Council recommended that the Commission require all background material for consideration be received at least fifteen days prior to meeting dates, or the matter will be tabled or opposed.

2. REPORT OF THE COMMISSION ON LEGISLATION & GOVERNMENTAL RELATIONS. In the absence of Dr. O. M. Jerde, Chairman of the Commission, Dr. Lushbough presented the report to the Council.

MINUTES

COMMISSION ON LEGISLATION & GOVERNMENTAL RELATIONS

1:00 P.M.

Holiday Inn

Saturday, February 25, 1978 Sioux Falls, South Dakota

The meeting was called to order by O.M. Jerde, M.D., Chairman. Those present for roll call were Doctors O.M. Jerde, C. L. Swanson, Bill Church, J. B. Gregg, V. Janavs, and R. J. Foley.

Dr. Foley moved to dispense with the reading of the minutes of the previous meeting inasmuch as they have been published. The motion was seconded and carried.

Dr. Church moved that the Commission extend a commendation to Mr. Johnson for his lobbying efforts on behalf of the State Medical Association. The motion was seconded and carried. Mr. Johnson also thanked the physicians for their assistance and recognized the assistance of Dave Gerdes.

1978 LEGISLATIVE SESSION REVIEW. Mr. Johnson reviewed the legislation sponsored by the State Association along with the endorsed bills and those which were opposed. A discussion was held concerning the Optometry Bill and the differing opinions of physicians in South Dakota concerning this bill. **Dr. Swanson moved that the Commission recommend that the State Medical Association encourage the ophthalmologists and optometrists to meet together and work out a compromise on optometry legislation and report back to the Commission at their fall meeting. The motion was seconded and carried.**

NURSE PRACTITIONER LAW. The Commission reviewed and discussed the Nurse Practice Act and the Physician Assistant Law with regard to prescribing privileges.

Pros

1. Nurse practitioners can purchase their own liability insurance whereas a physician assistant is covered through his employing physician.

Cons

1. Nurse practitioner law is vague with regard to supervision requirements.
2. The Commission has no information to compare educational background requirements for nurse practitioner and physician assistant.

The Commission directed the executive office to obtain from North Dakota information on the educational requirements for both the nurse practitioner and the physician assistant and to send this information to the Commission members along with a copy of the Tennessee law which allows nurse practitioners to prescribe for their review and discussion at the next Commission meeting. It was noted that additional information would be available from the Joint Practice Commission by the fall Commission meeting.

DISCUSSION WITH REPRESENTATIVES OF THE WELFARE DEPARTMENT. Mr. Johnson indicated that the Welfare Department was unable to have any representatives in attendance at the Commission meeting due to previous commitments. He stated that the 1978 Legislature did fund the Department of Social Services to allow them to reimburse the physicians in South Dakota on the basis of their 1976 profiles effective July 1, 1978. **Dr. Swanson moved that the Commission recommend to the Council that a resolution be passed requesting the Welfare Department representatives to make every effort to meet with the Commission on Legislation at their next meeting to discuss mutual problems and concerns and that this resolution be sent to the Department of Social Services along with a letter outlining the various problem areas which have been called to the Commission's attention. The motion was seconded and carried.** The Commission directed that any correspondence be sent to Dr. F. O. J. Westby with copies to Mr. Erv Schumacher and Mr. Vern Woodard.

PROFESSIONAL LIABILITY CASE—RULING ON STATUTE OF LIMITATIONS. Mr. Johnson reported that in a recent case in South Dakota the court ruled that the two year statute of limitation pertained only to individual physicians and not to medical corporations. The Commission directed Mr. Johnson to confer with Dave Gerdes and draft an amendment to the Medical Corporation Law which would institute a two year statute of limitation for medical corporation liability and submit this proposal to the Commission at their fall meeting. **Dr. Swanson moved that the Commission refer to the Commission on Professional Liability of the possibility of introducing informed consent legislation in light of the recent court decision. The motion was seconded and carried.**

LRC STUDY ON COST CONTAINMENT. Mr. Johnson indicated that the Commission members should be prepared to provide background material and possibly testimony on this subject. He stated that at this time it is

not known which legislators will serve on this study committee nor how the committee will proceed, but the executive office will keep the Commission members informed.

Mr. Johnson encouraged the physicians to become active in SoDaPAC and local political activities in an effort to elect legislators who are supportive of medicine in South Dakota.

The meeting adjourned at 3:45 p.m.

a. Optometry Legislation. **Dr. Jahraus moved that the Council accept the recommendation of the Commission to encourage the ophthalmologists and optometrists to meet together and work out a compromise on the optometry legislation. The motion was seconded and carried.**

b. Nurse Practitioner Law. The Council received the report and directed the Commission on Legislation and Governmental Relations to continue study on this matter and report back to the Council at an upcoming meeting.

c. Discussion with Welfare Department Representatives. **Dr. Hamm moved that the Council accept the recommendation of the Commission that the Council submit a resolution to the Welfare Department encouraging representatives to make every effort to meet with the Commission at their next meeting and to discuss mutual problems and concerns. The motion was seconded and carried.**

d. Amendment to Medical Corporation Law and Informed consent Legislation. **The Council directed the Commission on Legislation and Governmental Relations to consider an amendment to the Medical Corporation Law for the 1979 legislative session and the Commission on Professional Liability to review again informed consent legislation.**

3. **REPORT OF THE COMMISSION ON PROFESSIONAL LIABILITY.** Dr. Rost, Chairman of the Commission, presented to the Council a report on the Commission's last meeting.

MINUTES

COMMISSION ON PROFESSIONAL LIABILITY

9:30 a.m.

Sioux Falls, SD

Holiday Inn

February 25, 1978

The meeting was called to order at 9:30 a.m. by Michael Rost, M.D., Chairman of the Commission. Present for roll call were Drs. Rost, Donald Kelley, J. A. Muggly, Morris Radack. Also attending the meeting were Mr. David Gerdes, Association attorney, Mr. Robert Johnson, and Mrs. Patty Butler.

The minutes of the September meeting were approved as submitted to the Commission.

The Commission discussed the following item of Old Business:

ARBITRATION

Pros

More informal atmosphere
Expertise on the panel
Speedier processing
More convenient to settle
Less costly to defend

Cons

Lose certain amount of jury sympathy
Scope of appeal is greater in a court case
Court case has procedural safeguards
Administrative problems of signing up for arbitration
Involvement of office personnel
Acceptance by hospitals

Recommendation: The Commission reviewed the impact of the arbitration legislation. The Commission felt that although arbitration is not being utilized to a great degree at the present time, it is valuable to have this mechanism available; the Commission felt that the enactment of this legislation has improved the professional liability climate in South Dakota.

The Commission discussed the following items of New Business:

LETTER FROM MEDICAL LIABILITY MUTUAL INSURANCE COMPANY OF NEBRASKA

This letter requested an expression of interest on the part of the State Medical Association concerning a Physician-Owned Mutual Insurance Company.

Recommendation: The Commission recommended to the Council that additional information be obtained from the insurance company on the proposal and that a report be submitted to the Commission at a later date. This request for additional information would indicate no encouragement, no endorsement of the concept and no recommendation regarding the coverage by the State Medical Association.

TEN TIPS ON HANDLING YOURSELF IN COURT

The Commission reviewed a reprint of an article on suggestions for physician witnesses in court cases.

Recommendation: The Commission recommended that the Medical Association obtain approval to duplicate the article and provide a copy of the information to each member of the State Medical Association along with a future issue of the Grab Bag. The Commission recommended that an introductory paragraph be prepared by Mr. David Gerdes and included in the membership mailing.

EFFECTS OF CRIMINAL SANCTIONS BROUGHT AGAINST PHYSICIANS

The Commission has requested information concerning this subject from the American Medical Association. Information has not yet been received from the AMA, but it will be considered by the Commission at a later date.

REPORTS FROM INSURANCE COMPANIES ON MALPRACTICE SUITS FILED

The Commission recommended that data received from the Insurance Commissioner's office regarding malpractice suits filed in South Dakota be compiled for the information of the Commission. Identification of the physician involved would be deleted and indicated only by a code number. This information will provide information to the Commission on the number of suits being filed and the dollar amount involved; the Commission would also be able to pinpoint areas of recurring problems. The Commission also requested that information on income and expenses of the insurance companies for 1976 and 1977, as filed with the Insurance Commissioner be made available to the Commission.

The meeting adjourned at 12:15 p.m.

Dr. Buchanan moved to accept the report of the Commission as presented. The motion was seconded and carried.
4. REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE. Dr. Lushbough presented the report to the Council.

MINUTES

COMMISSION ON SCIENTIFIC MEDICINE

9:00 A.M.

Howard Johnson Motor Lodge

March 4, 1978

Sioux Falls, South Dakota

The meeting was called to order by Dr. James Larson, Chairman of the Commission. Those present for roll call were Drs. James Larson, R. D. Bloemendaal, G. Robert Bell, Gene Koob and R. B. Leander. Guest in attendance was Dr. James Ryan.

The Commission discussed the annual meeting which will be held in June, 1978. The moderator slots were filled in by the Commission. The Commission discussed attendance records at the 1978 annual meeting, and a card system will be utilized for physicians attending the scientific presentations to obtain continuing medical education credits. A discussion on the problem of obtaining a speaker for the rheumatology workshop was held. **Dr. Koob moved that the Commission hold the rheumatology program on Friday as planned but cancel the Saturday program.** The motion was seconded and carried.

Robert Johnson gave an update on laetrile from the

Legislative Session. He stated that he presented the position paper to the Legislature.

Dr. Koob reported on continuing medical education. The Watertown hospitals will be inspected on March 16, 1978. The medical school was inspected in October, 1977 but probably will not receive the recommendation from the LCCME until October, 1978.

The Commission discussed coordinating scientific programs presented in the State of South Dakota by the medical school, the Academy of Family Physicians, the Medical Association and specialty societies. No action was taken.

The meeting adjourned at 11:30 a.m.

Dr. Barlow moved to accept the report of the Commission as presented. The motion was seconded and carried.
5. REPORT OF THE COMMISSION ON INTERNAL AFFAIRS, COMMUNICATIONS & LIAISON. Dr. Finney, Chairman of the Commission, presented the report to the Council.

MINUTES

COMMISSION ON INTERNAL AFFAIRS, COMMUNICATIONS AND LIAISON

1:00 P.M.

Howard Johnson Motor Lodge

March 4, 1978

Sioux Falls, South Dakota

The meeting was called to order by Lawrence Finney, M.D., Chairman of the Commission. Present for roll call were Drs. L. W. Finney, Werner Klar, Loren Amundson, Charles Gwinn, John Barlow, C. Rodney Stoltz and Theodore Hohm. Also in attendance was Dr. James Ryan.

Dr. Stoltz moved that the minutes be accepted as printed. The motion was seconded and carried.

The Commission discussed the PROGRAM FOR THE IMPAIRED PHYSICIAN. **Dr. Stoltz moved that the Commission recommend to the Council the functions covered in the programs for impaired physicians be assigned to the Grievance Committee, and if it is felt necessary, that the Committee be renamed to cover this function. The motion was seconded. Dr. Barlow moved that the motion be amended to include "that the Grievance Committee's function would be to obtain facts and recommend rehabilitation measures; that if the physician involved did not follow these recommendations, the Committee would have the authority to report the matter to an appropriate body for action." The amendment was seconded and carried. The original motion as amended was carried.**

The Commission reviewed the BUDGET FOR 1978-79 and the January financial statement. Robert Johnson reported that the budget has been reviewed by the Budget and Audit Committee. **Dr. Finney moved that the Commission recommend to the Council that the budget as proposed be accepted for submission to the House of Delegates. The motion was seconded and carried.**

The Commission considered CHANGES IN THE BYLAWS. **Dr. Barlow moved that the Commission recommend the changes in the bylaws to the Council for consideration. The motion was seconded and carried.**

The Commission discussed STUDENT PARTICIPATION AND MEETING ATTENDANCE IN OUR ASSOCIATION. The question arose as to whether or not some dues should be charged. **Dr. Stoltz moved that the Commission recommend to the Council that the Association contact the Office of Student Affairs expressing our continued interest in student participation in our organization. The motion was seconded and carried.**

PHYSICIAN RECRUITMENT PROGRAM

Purposes: To attract physicians to South Dakota; to assist communities in establishing contacts with physicians; to provide a clearinghouse to match communities with physicians seeking placement; establish a good PR program.

2nd year: To maintain
& update\$1,500.00

Program Outline

1. Contact communities on placement list to determine current needs.
2. Prepare letter to alumni of USD School of Medicine; all doctors licensed in state, but practicing out of state; all doctors in primary care residencies in South Dakota, North Dakota, Iowa, Nebraska, Minnesota and Colorado; include a questionnaire on type of practice they are seeking or would be interested in. Contact junior and senior students at USD to obtain info on practice plans.
3. Schedule 4 regional meetings in South Dakota with community representatives to explain program and complete questionnaire for our records.
4. When replies received, match communities and doctors and provide info to community contact for follow up.
5. Prepare regular news releases on program progress and placement of physicians.

Mr. Johnson discussed the importance of CME credits being reported to the Association office because of the bylaw requirement for membership.

The meeting adjourned at 4:00 p.m.

Pros

Cons

1. Confrontation on an informal basis.
1. Many don't realize or accept the fact they have a problem.

b. 1978-79 Budget. The Council reviewed the 1978-79 budget, and thereafter, **Dr. Gerber** moved that the budget as proposed be accepted for submission to the House of Delegates. The motion was seconded and carried.

seconded. After discussion, Dr. Hamm moved that the motion be amended to include "Executive Secretary and Secretary-Treasurer and reviewed" following the word "prepared" under Article VIII, Section 2. Duties, subsection g. #1; and under Article IX, Section 3. Failure to Fill Office, subsection b. delete "in the absence of the AMA Delegate(s)". The amendment was seconded and carried. The motion as amended was passed.

e. Physician Recruitment Program. Dr. Gerber moved to accept the Physician Recruitment Program as printed including all five points in the outline, and recommended that the Medical School and Board of Regents be urged to encourage medical students to complete clerkships in South Dakota. The motion was seconded and carried.

f. Vote Required to Expel a Member from the SDSMA. **Dr. Odland** moved that the Bylaw be changed to require a 2/3 majority vote of the members present at the Council to expel a member from membership. The motion was seconded and defeated.

g. Bylaw Change—Name of Council. **Dr. Tracy moved** that the Bylaws of the SDSMA referring to the name of the Council be left as is. The motion was seconded and carried.

6. REPORT OF THE COMMITTEE ON LONG RANGE PLANNING. Dr. J. A. Muggly reviewed the report for the Council's information.

LONG RANGE PLANNING COMMITTEE

1:30 P.M.

Howard Johnson Motor Lodge
Sioux Falls, S.D.

The meeting was called to order at 1:30 p.m. by T. H. Sattler, M.D., Chairman. Present for roll call were Drs. Sattler, J. A. Muggly, Dennis Johnson, Michael Pekas, and Karl Wegner. Also attending the meeting were Robert Johnson, Gerald Maginn, and Patty Butler.

The minutes of the previous meeting were reviewed and Dr. Muggly moved that the wording of Item #6 be amended to read: "After discussion on the relations between medical staffs and hospital boards in South Dakota and throughout the country, Dr. Muggly suggested that an effort be made through the Medical Association and Hospital Association to recommend that one or more physicians be named to serve on the Board of Directors of every hospital in the state. The motion was seconded and it was voted to correct the minutes in that manner. Mr. Johnson read a letter received from a hospital in the state regarding the process followed in selecting members of hospital boards for the information of the committee members.

Mr. Johnson reported to the Long Range Planning Committee on the actions of the 1978 Legislative Session as well as a synopsis of the meetings of the Liaison Committee which have been held with representatives of the State Health Department.

HSA

The Committee reviewed a report on the status of the HSA in South Dakota.

ACTION: Dr. Muckey moved that the Long Range Planning Committee urge the Council to continue to monitor the activities of the HSA in South Dakota and to continue to encourage the members of the South Dakota State Medical Association to take part in the deliberations of the various task forces and to provide input to the HSA staff through attendance at the meetings being held at the present time. The motion was seconded and carried.

43

A discussion was held on what role the South Dakota State Medical Association should take in defining the future role of the rural hospitals in the State in providing health care delivery.

Pros

1. A public education campaign would be beneficial.
2. Medical Association would be in a position of offering alternatives in a positive fashion.
3. Cooperative efforts with Hospital Association would benefit hospitals and physicians in South Dakota.

Cons

1. Should economics be allowed to take its toll in these areas?
2. Can quality care be given in these hospitals in all fields of medicine?
3. Should rural hospitals be converted to extended care facilities?

ACTION: The Long Range Planning Committee directed that this item be placed on the agenda for the next meeting; that the appropriate Commission of the South Dakota State Medical Association might be asked to establish some type of criteria and various alternatives available to the rural hospitals of South Dakota so they may continue to be a part of the health care delivery system of the state, perhaps filling a very different role than in the past.

HEALTH MAINTENANCE ORGANIZATIONS

The Committee reviewed a copy of a letter from the Department of Health, Education and Welfare in Denver, regarding a local organization seeking a grant from the Federal government to conduct an HMO feasibility study.

Pros

1. A lot of information is available which would be of benefit to the Association.
2. Association would have documented evidence of costs of health care in S.D.
3. Can Association refuse to gather info and evaluate knowledge accumulated?
4. Association in better position than districts.

Cons

1. Using government money.
2. Very sensitive area.

ACTION: The Long Range Planning Committee recommends that this item be discussed by the Council and direction given for the role of the South Dakota State Medical Association in this area.

GERIATRIC-GERONTOLOGY PROGRAM

The Long Range Planning Committee discussed the establishment of a program of this type utilizing the South Dakota Human Services Center, the USD School of Medicine and the SDSMA.

Pros

1. Would be advantageous for the Association to develop a position on an issue that affects many people and one in which we do not have a vested interest.
2. Very important to medical care in South Dakota.
3. Large percentage of population in this age group.
4. Grant monies available.

Cons

1. Using governmental financing.

ACTION: The Committee recommends to the Council that the Long Range Planning Committee be authorized to establish an ad hoc committee to spearhead the preliminary work for this project; that interested individuals outside the medical profession be invited to participate in the deliberations

of the ad hoc committee and they attempt to identify what services are needed; what funds are available; what needs are being met at the present time; what strings would be attached to grant monies.

MISCELLANEOUS

The Committee discussed the report of the Commission on Cost Containment and the first section of the complete report which has been received. No action was taken.

The Committee discussed input of the medical profession on the Task Forces of the HSA. The concerns of a physician in this area were expressed and the Committee felt that at this time, adequate input was being made by the Medical Association; that if additional study is needed on a specific paper, it can be done at the appropriate time.

Suggestions from Dr. E. H. Heinrichs, who was unable to attend, were discussed for the information of the Committee. The meeting adjourned at 3:30 p.m.

a. HMO Grant for Feasibility Study. Dr. Leigh moved that the Long Range Planning Committee continue to monitor HMO activities and keep the Council informed. The motion was seconded and carried. Dr. Leigh moved that the Council accept the report of the Long Range Planning Committee including the recommendation that an Ad Hoc Committee for the geriatric - gerontology program be established. The motion was seconded and carried.

7. REPORT OF MEDICAL SCHOOL—KARL WEGNER, M.D. Dr. Karl Wegner reported on the following items to the Council concerning the Medical School.

a. Accreditation. The Medical School has been surveyed and they are awaiting the report from the Accreditation Commission.

b. Funding. Dr. Wegner stated that the Medical School's inflationary increment has been 3% while actual inflation has caused increases of 8 - 12%.

c. Student Tuition Waiver. There will be a 10% interest charge for South Dakota students who accept the tuition waiver but do not return to South Dakota to practice medicine.

8. CIRCUIT RIDERS PROGRAM. Dr. R. H. Quinn reviewed this program which is sponsored by the USD Medical School for the Council's information.

Pros

1. Gets CME to rural areas.
2. Will not enter into the primary care area.
3. Local physicians will make requests for needed expertise and CME programs according to their own determined needs.
4. Category I credits will be available.

Cons

1. Possibility this could expand to include patient primary care.
2. One district society voted not to endorse this program.

The Council accepted this report for information only.

The meeting adjourned at 5:00 p.m. and reconvened at 9:30 a.m.

9. APPOINTMENT OF THREE MEMBERS TO ENDOWMENT BOARD OF DIRECTORS. Nominations received for one year terms on the Endowment Board were Dr. R. R. Giebink of Sioux Falls, Dr. J. Hamm of Sturgis, Dr. J. Ryan of Mobridge, and Dr. D. Kelley of Rapid City. A secret ballot was taken and Dr. Ryan, Dr. Giebink, and Dr. Hamm were elected to serve one year terms on the Endowment Board of Directors.

10. DISTINGUISHED SERVICE AWARD AND COMMUNITY SERVICE AWARD RECIPIENTS. Nominations were received by the Council. Dr. Jones moved the Council accept the nominees for the Distinguished Service Award and the Community Service Award. The motion was seconded and carried.

11. PHYSICIANS ON HOSPITAL BOARDS OF TRUS-

TEES. The Council reviewed the letter received from the Hospital Association concerning this matter for their information.

12. REPORT OF THE LIAISON COMMITTEE WITH STATE HEALTH DEPARTMENT. Mr. Johnson reported to the Council in the absence of Dr. Russell Harris. Mr. Johnson reviewed some of the problems encountered by non JCAH accredited hospitals with regard to inspections by the State Health Department. The State Health Department assured the physicians that the Chief of the Medical Staff would be notified when the inspections were going to be held, he could sit in on the exit interviews, and the inspectors work would not impose on the patient's right to privacy.

13. HONORARY MEMBERSHIP. Those doctors nominated for honorary membership are C. H. Dulaney, M.D., Floyd Alcorn, M.D., and Robert Fisk, M.D. **Dr. Leigh moved that Doctors Dulaney, Alcorn, and Fisk be granted honorary membership in the State Medical Association. The motion was seconded and carried.**

14. REQUEST FROM AAMSE FOR FINANCIAL SUPPORT. Mr. Johnson presented this request from the AAMSE to contribute \$500 to the AAMSE executive office. Last year the Medical Association contributed \$100 to AAMSE. **Dr. Millea moved that the State Medical Association again contribute \$100 to AAMSE. The motion was seconded and carried.**

15. RECOMMENDATIONS TO AMA FOR APPOINTMENT TO COUNCILS & COMMITTEES. There were no nominations for appointment at this time. It was noted that Dr. Quinn and Dr. Wegner now serve on Committees or Councils.

16. APPOINTMENT TO SODAPAC BOARD. **Dr. Taylor moved that the Council appoint Mrs. Eldon Bell, Mrs. James Hovland, Mrs. C. Rodney Stoltz, and Mrs. Curtis Wait to the SoDaPAC Board of Directors. The motion was seconded and carried.**

17. CONTROL DATA PROGRAM IN SOUTH DAKOTA. Dr. Hamm presented this report to the Council for information only.

18. ANNUAL MEETING. Mr. Johnson reviewed the schedule for the Annual Meeting to be held June 8-11 and encouraged all members to attend.

19. VOLUNTARY EFFORT. Dr. Lang presented information to the Council on the program and budget proposed by the Hospital Association and the Medical Association. **Dr. Leigh moved that the Council accept the Voluntary Effort Program and budget as proposed. The motion was seconded and carried.**

20. HOSPITAL RATE REVIEW LAW. Dr. Lang briefly reviewed this legislation which was introduced during the last legislative session and similar legislation enacted in Maryland, Colorado, and Washington and the effect it had on physicians in those states.

Pros

Cons

1. May work hardship on small rural hospitals.
2. May include physicians, especially those who are hospital-based.
3. The cost involved in establishing the rate review system is substantial.

Dr. Lang moved that the Council oppose the Hospital Rate Review Law. The motion was seconded and carried.

21. NATIONAL COMMISSION ON COST OF MEDICAL CARE. Mr. Johnson presented this item to the Council. After discussion, **Dr. Leigh moved that the report be included in the Delegates Handbook and a letter sent to each House member requesting that each District review this report prior to the annual meeting and that each**

delegate be fully informed and instructed by the District for action at the annual meeting. The motion was seconded and carried.

22. PROTOTYPES OF NATIONAL HEALTH INSURANCE PLAN. Information on various National Health Insurance plans was disseminated to the Council members for their information and use in making presentations.

23. ASSOCIATION ATTORNEY'S RETAINER. Mr. Johnson presented a request to the Council from Mr. Dave Gerdes, Attorney for the Association, to increase his firm's monthly retainer from \$250 to \$300. **Dr. Aspaas moved that the monthly retainer for the Association's legal counsel be increased from \$250 to \$300 a month effective May 1, 1978. The motion was seconded and carried.**

24. MEDICAL SCHOOL RESOLUTION. Dr. Lang presented the following resolution to the Council for their consideration:

"The Council of the South Dakota State Medical Association encourages the Executive Committee of the University of South Dakota School of Medicine to consider filling any or all of the existing four (4) vacancies in the Class of 1981 with applicants who are South Dakota residents and will be qualified for advanced standing at the sophomore level by 1 September, 1978."

Dr. Millea moved to accept the resolution as presented. The motion was seconded. Following lengthy discussion, Dr. Leigh moved to call the question. The motion was seconded and carried. Dr. Lang moved that a written ballot be taken. The motion was seconded and carried. The motion to accept the resolution failed.

Dr. Ryan shared with the Council information on the (1) Health Care Financing Administration, (2) HMO's, and (3) a letter from the President of the Utah Medical Association concerning the Fraud Division of the Department of HEW. He also thanked all those Council members who attended meetings as representatives of the State Association during the past year.

Dr. Gerber discussed problems he has had with the Medicare Division not accepting his data processing system for completing claims. Dr. Aspaas, chairman of the Blue Shield Board, stated this matter would be brought to the attention of Blue Shield, the Medicare carrier for South Dakota, and hopefully can be resolved in the near future. The meeting adjourned at 11:30 a.m.

Pop's Proverbs

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SOUTH DAKOTA JOURNAL OF MEDICINE

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**Polypoid Fibrous Hamartoma as Filling
Defect in Calyx in a Fourteen Year Old
Girl**

J. Stam, M.D.

A. J. Hartzell, M.D.

J. F. Barlow, M.D.

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Porphyria Cutanea Tarda

Donald Schellpfeffer

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**Current Progress in Obstetrics and
Gynecology, Lecture #7—Sequelae
of Incomplete Gynecologic Operations:
II. The Uterus & Cervix**

Brooks Ranney, M.D.

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Future Meetings

August

Essentials of Practice Management,
Hyatt Regency, Dallas, TX, Aug.
4-5. Fee: \$285. Contact: Practice
Productivity, Inc., 2000 Clearview
Ave., Atlanta, GA 30340.

1978 Black Hills Summer Seminar,
Holiday Inn of the Northern Hills,
Spearfish, SD, Aug. 10-12. 15 hrs.
AMA and AAFP credits. Fee:
\$50.00. Contact: Black Hills Sum-
mer Seminar, 608 West Ave., N.,
Sioux Falls, SD 57104.

**Coronary Disease, Exercise Testing,
and Cardiac Rehabilitation**, Play-
boy Club, Lake Geneva, WI, Aug.
11-13. 13 hrs. AMA & AAFP cred-
its. Fee: \$195. Contact: Internat'l
Med. Edu. Corp., 64 Inverness Dr.,
E., Englewood, CO 80110.

**Physicians and Their Families: An
Experience in Communication**, The
Menninger Foundation, YMCA of
the Rockies, Estes Park, CO, Aug.
13-18. 25 hrs. AMA Category I and
prescribed AAFP credits. Fee: \$325.
Contact: Mrs. June Housholder,
Div. of CME, The Menninger Founda-
tion, P. O. Box 829, Topeka, KS
66601.

September

**American Society of Clinical Patholo-
gists**, St. Louis, Sept. 14-22. Contact:
American Society of Clinical Patho-
logists, 2100 W. Harrison St., Chi-
cago, IL 60612.

**1978 Annual Otolaryngologic Assem-
bly**, Eye & Ear Infirmary, U. of Il-
linois Hosp., Chicago, IL, Sept. 17-
22. Contact: Dept. of Otolaryngol-
ogy, Ill. Eye & Ear Infirmary, 1855
West Taylor, Chicago, IL 60612.

Hospital Medical Staff Conference,
The Mark, Vail, CO, Sept. 25-28.
Fee: \$160. Contact: CME, U. of
Colorado School of Medicine, 4200
E. Ninth Ave., Denver, CO 80262.

October

**National Preventive Medicine Confer-
ence**, Marriott Downtown, Chicago,
IL, Oct. 4-8. Contact: IAPM
Headq., 10409 Town & Country
Way, Houston, TX 77024.

**Cardiac Symptoms and Arrhythmias—
Their Diagnosis and Treatment**,
Water Tower Hyatt, Chicago, IL,
Oct. 6-8. Fee: \$195. 13 hrs. Cate-
gory I credits. Contact: Internat'l
Med. Ed. Corp., 64 Inverness Dr.,
E., Englewood, CO 80110.

**Coronary Disease, Exercise Testing
and Cardiac Rehabilitation**, Water

Tower Hyatt, Chicago, IL, Oct.
13-15. Fee: \$195. 13 hrs. Category
I credits. Contact: Internat'l Med.
Ed. Corp., 64 Inverness Dr., E.,
Englewood, CO 80110.

**Third Annual International Body
Imaging Conference**, Maui Surf
Hotel, Maui, Hawaii, Oct. 14-22.
Fee: \$295. 25 hrs. Category I
credits. Contact: Ronald Friedman,
M.D., Conf. Coord., West Park
Hosp., Dept. of Radiology, 2141
Roscoe Blvd., Canoga Park, CA
91304.

Family Practice Review, YMCA of
the Rockies, Estes Park, CO, Oct.
16-21. Fee: \$175. Contact: CME,
U. of Colorado School of Medicine,
4200 E. Ninth Ave., Denver, CO
80262.

**30th Annual Program of the Society
for Clinical and Experimental Hyp-
nosis**, Grove Park Inn, Asheville,
NC, Oct. 17-22. Contact: Office of
CME, 236 MacNider 202H, U. of
N.C., Chapel Hill, NC 27514.

**Clinical Electrocardiography and
Arrhythmia Management**, Water
Tower Hyatt, Chicago, IL, Oct.
27-29. Fee: \$195. 15 hrs. Category
I credits. Contact: Internat'l Med.
Ed., Corp., 64 Inverness Dr., E.,
Englewood, CO 80110.

POLYPOID FIBROUS HAMARTOMA AS FILLING DEFECT IN CALYX IN A FOURTEEN YEAR OLD GIRL

A case of a fourteen year old girl with a filling defect in the pelvis of left kidney due to a peculiar fibrous hamartoma is presented. The tumor is reported because it is unlike the usual fibroepithelial polyps described in the urinary collection system and unlike the common medullary fibroma. The authors feel the lesion is certainly extremely uncommon if not unique.

by

J. Stam, M.D.*

A. J. Hartzell, M.D.**

J. F. Barlow, M.D.***

An unusual case of a polypoid benign fibrous mass projecting into an upper pole calyx of the left kidney is described in a fourteen year old girl who had symptoms of intermittent left flank pain. Because of the unknown potential and bizarre nature of the lesion, a left upper pole nephrectomy was done. We could not find a similar case described in the literature.

This 14-year-old Caucasian female was admitted for intermittent left flank pain of one year's duration.

The patient had had a one year history of intermittent left flank and loin discomfort which had been associated with an upright position and exercise such as riding a horse or gymnastics. There was some question of intermittent low grade fever but this was not documented. The patient had a vague history of epigastric discomfort with no particular accentuating factors or relationship to the left flank pain. An upper gastrointestinal series had been negative. Cystoscopy had shown meatal stenosis. Bilateral retrograde pyelogram and excretory urograms showed a discrete radioopaque filling defect in the left superior calyx. (Fig. 1) There was no history of voiding difficulties, recurring urinary tract infections, hematuria or dysuria.

The patient had been in good health. She had had a tonsillectomy five years prior to admission and recently had had an operation for removal of an ingrown toenail. She had had very frequent streptococcal sore throats prior to her tonsillectomy and with one of these had had slight arthralgia, but there had been no documented rheumatic fever. There was no other history of other hospitalizations, serious illnesses, allergies or medications.



Figure 1

Note discrete filling defect in pelvis.

PHYSICAL EXAMINATION: Well developed, well nourished girl. Height 5'6", weight 129 lbs., pulse 84/min. and regular, respirations 20/min. and regular, blood pressure systolic 102 and diastolic 70. Examination of the head and neck was unremarkable. The chest was clear to auscultation and percussion. The breasts were within normal limits. The heart showed a sinus tachycardia, but there were no murmurs or abnormalities. Examination of the abdomen revealed no costovertebral angle tenderness. There were no palpable organs, masses, or tenderness. Pelvic examination under anesthesia at the time of cystoscopy was within normal limits. Examination of the extremities and neurologic examination revealed no abnormalities.

LABORATORY DATA: Urinalysis: yellow, clear, specific gravity 1.008; pH 7.5; negative for protein, glucose, ketone bodies, hemoglobin and bile; sediment—no abnormality. Tests for cystine and homocystine were negative. Hemoglobin 13.5 gms/dl, red count 4.51 million/mm³, hematocrit. 39 vols/dl, mean corpuscular hemoglobin 30 micromicrograms, mean corpuscular volume 86 cubic micra mean corpuscular hemoglobin concentration 34%, total leukocyte count 6,200/mm³, with 49% segmented neutrophils, 2% eosinophils, 46% lymphocytes and 2% monocytes. The red cells were normochromic, normocytic and the platelets ap-

* Pediatrician, Worthington Regional Hospital, Worthington, Minnesota.

** Urologist, Worthington Regional Hospital and Sioux Valley Hospital, Sioux Falls, SD; Assistant Professor of Urology, School of Medicine, University of South Dakota.

*** Pathologist, Worthington Regional Hospital and Sioux Valley Hospital, Sioux Falls, SD; Professor of Pathology, School of Medicine, University of South Dakota.

peared normal in number and morphology. The zeta crit was 49% (normal 40-54%). pH 7.31, PCO_2 52 torr, CO_2 content 26 mM/L, sodium 139 meq/L, potassium 4.2 meq/L, chloride 107 meq/L. Lactic dehydrogenase, alkaline phosphatase, aspartate aminotransferase (SGOT), total bilirubin, calcium, inorganic phosphorus, glucose, blood urea nitrogen, creatinine, uric acid, and cholesterol were within normal limits. A routine urine culture showed no growth in 24 hours.

X-RAYS: A chest film was negative. An infusion pyelogram with bilateral nephrotomogram showed an irregular filling defect in the upper pole calyx and infundibulum of the left kidney. (Fig. 1)

HOSPITAL COURSE: On the second hospital day the kidney was explored in the left flank position. The kidney was mobilized and the ureter identified. The ureter was followed to reveal an intrarenal pelvis. An incision was made in the posterior aspect of the pelvis and a nephroscope inserted. There was a large tumor like mass in the upper pole calyx. The tumor was pale, white, and edematous. A fine vascular pattern was noted. Biopsy was taken and frozen section report was benign tumor. Because of the unusual nature of the tumor and question of continued growth, pain, and hemorrhage; a partial nephrectomy of the upper pole of the left kidney was performed.

The pathologic specimen consisted of the upper pole of the kidney weighing 34 gm. and measuring 8 x 5 x 3 cm. The cortical surface was tan-brown and smooth. The renal parenchyma was unremarkable. Protruding into the pelvis adjacent to the upper pole papilla was a 1.8 x 1.0 x 0.8 cm. slightly edematous firm mass which was yellow-white on cut section with small cystic spaces. (Fig. 2) It involved the renal medulla but was well demarcated. Microscopically the polypoid solid tumor mass was superficially covered by normal transitional epithelium. (Fig. 3) In one area there was an epithelial erosion with slight superficial hemorrhage. The main body of the mass was composed of relatively acellular fibrous tissue with scattered fibroblasts. Within the fibrous tissue were scattered dilated tortuous glandular spaces lined by pseudopalisaded cuboidal epithelium. Intraglandular papillary projections covered by this papillary epithelium occasionally extended into these irregularly cystically dilated spaces. (Fig. 4) Some cystic spaces near the periphery were lined by transitional epithelium. The intramedullary portion of the fibrous tumor was well demarcated from the medullary tubules but there was no capsule. A trichrome stain showed the stroma of the neoplasm to give a typical reaction for fibrous tissue.

The postoperative course was uneventful and the patient was discharged on the seventh postoperative day. Clinical follow-up has revealed no further symptoms.

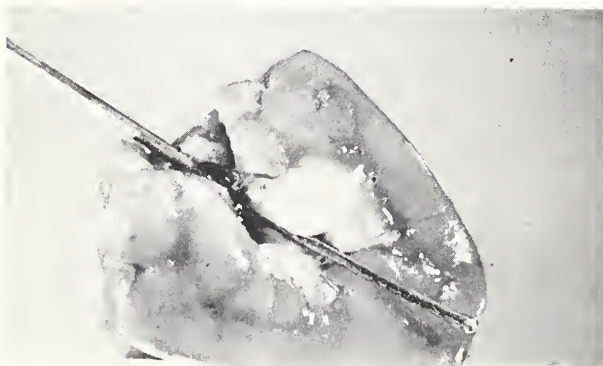


Figure 2
Probe in beneath white well demarcated tumor.

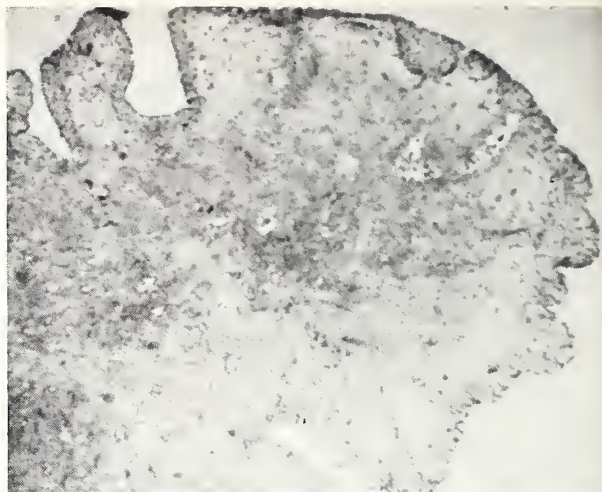


Figure 3
Polypoid projection of tumor into pelvis covered by normal transitional epithelium.

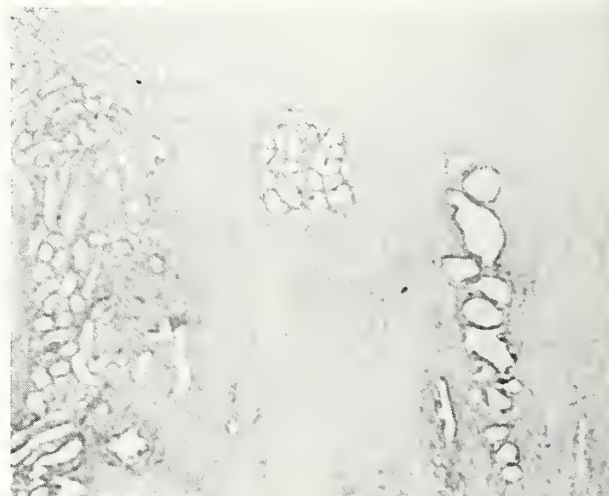


Figure 4
Portion of tumor at junction of medulla showing no capsule and basically fibrous nature with embedded cystic tubules.

DISCUSSION

The advent of multiple radiologic techniques to evaluate the urinary collecting system has enabled physicians to detect lesions in this area with greater frequency at an earlier stage of development. Occasionally unusual lesions such as this benign fibrous proliferation projecting into a renal calyx will cause a filling defect. Even with the rather new technique of nephroscopy and the knowledge of the benign nature of the neoplasm on biopsy, it was difficult to evaluate the potential of the lesion or its relationship to the patient's symptoms. Conservative partial nephrectomy was carried out. This would have been necessary in any case since the tumor involved the medulla and resection of the polypoid portion would probably have been followed by recurrence.

The lesion is certainly not well known and is not described in reviews of renal tumors in adults or children.^{1,2,5} It is histologically similar to the renomedullary interstitial tumor (medullary fibroma) but this lesion is almost never seen in individuals below thirty and does not present as a polypoid projection.¹ The fibroepithelial polyps of the pelvis and ureter are often more arborescent, tend to be multiple and are commonly located in the ureter. Such lesions of the pelvis have been described.^{3,4} However, the neoplasm in our case is not the typical elongated growth described in the ureter. Trapped tubular or glandular elements also suggest renal origin as well as definite presence of the tumor in the renal medulla.

This case is being reported to note that benign neoplasms of the renal pelvis do exist in children and can be investigated with modern techniques such as nephroscopy with maximum preservation of functional renal parenchyma. Papillary transitional lesions of benign and malignant nature have been reported in children. However, it is well to realize less

serious neoplasms do occur and can be managed conservatively. The particular lesion described is extremely unusual and may serve as a part of a larger series by a future author investigating similar entities.

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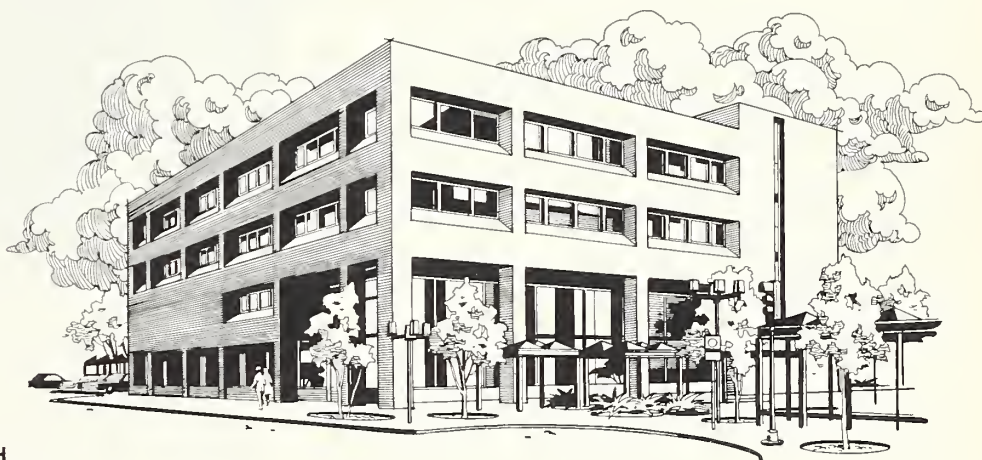
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SOUTH DAKOTA CHAPTER NEWS



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PRESIDENT SPEAKS—SOC REPORT

The weekend of April 28, saw Drs. Amundson, Friess, Nemer, Tschetter and Lindbloom attending the annual SOC (State Officers Conference) in Kansas City, Missouri. The meeting was well attended by over 300 registrants representing the state chapters of AAFP. Some of the highlights of the conference were as follows.

The AAFP will sponsor a Home Continuing Education course which is due to start this coming September. The members will be receiving information about it soon, and it sounds as if it should be a top notch program. The course will consist of a monograph, tape, pre and post testing material, and should take about 1 - 1½ hours time per week to cover the material. Cost to AAFP members will be \$190.

A new milestone was reached in the National AAFP membership recently when the 40,000th member was signed.

During the meeting your South Dakota Chapter received recognition for having more than 90% of the Family Practice residents sign as members of the AAFP. This is primarily the result of the efforts of Loren Amundson, and he deserves much credit and thanks for this.

We now have over 337 approved residencies in Family Practice, training some 5,000 individuals for our specialty. This certainly constitutes a real change from some 10 years ago. It was pointed out that there is a dire need for teaching M.D.'s in these programs.

Mention was made about cost containment, and it was felt that we should really refer to this as cost awareness and cost effectiveness. These are perhaps better terms and will help us to more effectively deal with what is now a rather popular topic.

I note that the brochures for the Summer Black Hills Seminar have now been sent out, and it would appear that Bruce Lushbough has set up a fine program for us. It should be a good time for education and relaxation, and we hope to see you all there in August.

B. O. Lindbloom, M.D.

SDAFP AWARDS MEMORIAL MERIT SCHOLARSHIP

Verdayne R. Brandenburg, M.D., 1978 USDSM graduate from Huron, received the annual \$1,000 award for the current year. Dr. Brandenburg began his Family Practice Residency in the Sioux Falls program July 1.



Dr. B. O. Lindbloom, President, SDAFP, (l) and Verdayne Brandenburg, M.D., award winner (r).

Dear Dr. Lindbloom and members of the South Dakota Chapter, AAFP:

Thank you very much for presenting me with the Memorial Merit Scholarship on May 11. To be selected for this high honor by your group is both a very gratifying and humbling experience. This award is particularly meaningful to me at this time because the memory of Dr. Ed Batt and his achievements are so very near to all of us.

As the field of medicine becomes more and more sophisticated, the tendency toward super-specialization is becoming a trend. Unfortunately, this may also lead to the depersonalization of medical care delivery. It is my firm belief that Family Practice medicine offers a viable alternative to this trend. I am, therefore, strongly committed to the future of Family Practice, and am looking forward to beginning my residency in Sioux Falls on July 1.

Thank you once again for the award and scholarship. It is an honor that I shall cherish all my life.

With gratitude,
Verdayne Brandenburg

BLACK HILLS SUMMER SEMINAR

Be sure to attend this annual business and scientific meeting in Spearfish, August 10-12.

President's Page

South Dakota has seventy-two hospitals of which ten are Federal. There are twenty-six hospitals, including six Federal, which are accredited by the Joint Commission on Accreditation of Hospitals. There are sixty-one hospitals, obviously a large majority, which are accredited via South Dakota State Health Department inspection teams. Since these hospitals are receiving Federal funds such as Medicare, the criteria for accreditation are established by the Department of HEW of the Federal Government. The State inspectors are required by HEW to take a two week course outlining how the inspection is to be done. The Health, Education and Welfare Department also has its own regional inspectors that do spot checks on hospitals, thereby "inspecting the inspectors." All results of inspections or surveys are sent to the Regional Office of Health, Education and Welfare, which is in Denver. Accreditation is for one year and, as you can see, the bottom line is that approval is granted by the Federal Government.

I think we all agree that the accreditation process for hospitals has upgraded the quality of medical care in this country over the years, but we should not forget, ever, that the origins of this activity are from the medical profession and not government. Government, however, will continue to insert itself into this process as long as government funds are used to pay for any part of hospital care.

Our job is to see that in doing so, their influence is directed toward the quality of service in a fashion that is truly beneficial to the people. Quality, as you know, is often in the eye of the beholder and although government gives some lip service to quality, their motivation is coming from a different perspective than that of our profession. What may be construed as good for hospitals in a metropolitan area, for example, may not be good for hospitals in rural South Dakota. Criteria and regulations often do not address the differences. These criteria and regulations are not the law of the land. However, if they are not challenged, they soon become just that. Our responsibility to the people of our State is to make these challenges. None of us are against change. Change is necessary for progress, as it always has been, but the form of change in medical affairs, such as hospital accreditation activities, is our traditional responsibility. I urge each one of you to please accept your share of that responsibility. When the accreditation inspectors come to your hospital, take part in the review and discussions. If there are things you disagree with, make your thoughts known. If you need help, ask your colleagues in the Medical Association.

The people in our communities have rights, and in medical affairs, you are their advocate. Don't hesitate to be one.

Fraternally,
Russell H. Harris, M.D., President
South Dakota State Medical Association

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DRUG INTERACTION WITH ORAL ANTICOAGULANTS

There are various drug interactions with anticoagulants. The below may be helpful in situations where oral anticoagulation monitoring results as reflected in prothrombin time values do not seem to fit the therapeutic effect with the usual doses given. The following are the mechanisms of actions and their number will follow the drugs as indicated below:

1. Reduces Vitamin K availability
2. Reduces drug absorption
3. Changes drug binding to albumin
4. Affects the metabolism of drugs
5. Changes receptor affinity for the drugs
6. Reduces Vitamin K dependent factor levels
7. Has independent effect on hemostasis

Drugs that Potentiate Oral Anticoagulants

- Salicylates (3,6,7)
- Phenylbutazone (3,4,7)
- Thyroid hormones (3,6)

Drugs that Potentiate Oral Anticoagulants in Some Individuals

- Alcohol (acute abuse 4,6,7)
- Anabolic steroids (4)
- Antibiotics (1,4)
- Antiplatelet agents (7)
- Clofibrate (3,5)
- Diphenylhydantoin (?)
- Oral hypoglycemic agents (?,3,4)
- Liquid paraffin (1,2)
- Quinidine sulfate (?)
- Sulfonamides (acidic 1,3)

Drugs That Antagonize Oral Anticoagulants

- Barbiturates (4,2)

Drugs that Antagonize Oral Anticoagulants in Some Individuals

- Alcohol (chronic abuse 4)
- Allopurinol (bishydroxy coumarin only 4)
- Cholestyramine (Warfarin only 2)
- Diuretics (4)
- Glutheimide (?)
- Nortriptyline (bishydroxy coumarin only 2)
- Rifampin (?)

John F. Barlow, M.D.
Pathologist

DESCRIPTION Each tablet of PERCOCET®-5 contains 5mg oxycodone hydrochloride (WARNING: May be habit forming), 325mg acetaminophen (APAP).

INDICATIONS For the relief of moderate to moderately severe pain.

CONTRAINDICATIONS Hypersensitivity to oxycodone or acetaminophen.

WARNINGS **Drug Dependence** Oxycodone can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence and tolerance may develop upon repeated administration of PERCOCET®-5, and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral narcotic-containing medications. Like other narcotic-containing medications, PERCOCET®-5 is subject to the Federal Controlled Substances Act.

Usage in ambulatory patients Oxycodone may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using PERCOCET®-5 should be cautioned accordingly.

Interaction with other central nervous system depressants Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics or other CNS depressants (including alcohol) concomitantly with PERCOCET®-5 may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

Usage in pregnancy Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, PERCOCET®-5 should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

Usage in children PERCOCET®-5 should not be administered to children.

PRECAUTIONS **Head injury and increased intracranial pressure** The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute abdominal conditions The administration of PERCOCET®-5 or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

Special risk patients PERCOCET®-5 should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

ADVERSE REACTIONS The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients, and some of these adverse reactions may be alleviated if the patient lies down.

Other adverse reactions include euphoria, dysphoria, constipation, skin rash and pruritus.

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DRUG INTERACTIONS The CNS depressant effects of PERCOCET®-5 may be additive with that of other CNS depressants. See WARNINGS.

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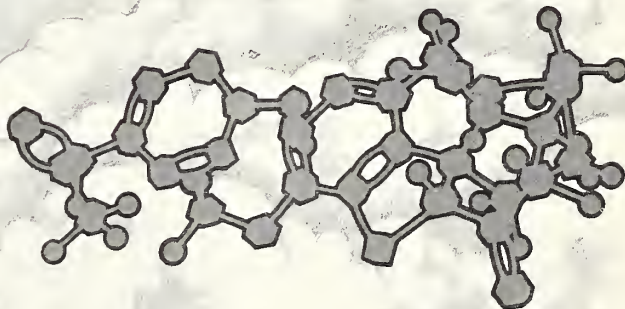
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While the Medical Necessity Program is the responsibility of the Blue Shield Association, these specialty groups working in their respective areas of practice have voluntarily assisted in the programs, by helping identify procedures which are, in most circumstances, of dubious current usefulness.

The following is a list of those procedures already identified:

Bronchoscopy—with injection of contrast medium for bronchography

Bronchoscopy—with injection of radioactive substance

Ligation of internal mammary arteries, unilateral

Ligation of internal mammary arteries, bilateral

Radical hemorrhoidectomy, Whitehead type, including removal of entire pile bearing area

Omentopexy for establishing collateral circulation in portal obstruction

Kidney decapsulation, unilateral

Kidney decapsulation, bilateral

Perirenal insufflation

Nephropexy: fixation or suspension of kidney (independent procedure), unilateral

Circumcision, female

Hysterotomy, non-obstetrical, vaginal

Supracervical hysterectomy: subtotal hysterectomy, with or without tubes and/or ovaries, one or both

Uterine suspension

Uterine suspension, with presacral sympathectomy

Ligation of thyroid arteries (independent procedure)

Hypogastric or presacral neurectomy (independent procedure)

Angiocardiography, single plane, supervision and interpretation in conjunction with cineradiography

Angiocardiography, multi-plane, supervision and interpretation in conjunction with cineradiography

Angiocardiography, utilizing CO₂ method, supervision and interpretation only

Angiography—coronary, unilateral selective injection supervision and interpretation only, single view unless emergency

Angiography—extremity, unilateral, supervision and interpretation only, single view unless emergency

Protein bound iodine (PBI)

Icterus index

Basal metabolic rate (BMR)

Phonocardiogram with interpretation and report, and with indirect carotid artery tracing or similar study

Ballistocardiogram

Fabric wrapping of abdominal aneurysm

Extra-intra cranial arterial bypass for stroke

Fascia lata by stripper for lower back pain

Fascia lata by incision and area exposure, with removal of sheet for lower back pain

Ligation of femoral vein, unilateral or bilateral for post-phlebitic syndrome

Excision of carotid body tumor, with or without excision of carotid artery for asthma

Sympathectomy, thoracolumbar, unilateral or bilateral for hypertension

Sympathectomy, lumbar, unilateral or bilateral for hypertension

Splanchnicectomy, unilateral or bilateral for hypertension

We do not recommend that physicians categorically discontinue these procedures. Almost every procedure can be medically justified in a specific instance. We do recommend, however, that each physician determine whether the results of any procedure justify the cost.

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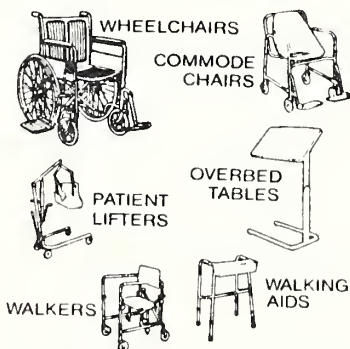
**CALL FOR ABSTRACTS
FOR 1979 SDSMA ANNUAL MEETING**

The Commission on Scientific Medicine of the South Dakota State Medical Association will accept abstracts for consideration of scientific presentations to be made at the 1979 Annual Meeting of the SDSMA to be held June 7, 8, 9, 10, 1979, in Rapid City, South Dakota.

The deadline for submitting abstracts is September 1, 1978. Abstracts should be typed, double spaced and sent to:

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Letters To The Editor

First, I apologize for how long it took me to thank you for the award I received. But, since I received the award I've been busy on the preceptorship, moving to Sioux Falls, and studying for National Boards.

I'd like to thank you for the South Dakota State Medical Association Award which I received recently. It is a great help and I appreciate your consideration very much. I'll use the money wisely to help in furthering my medical education.

Thank-you again.

Respectfully,
Jerome W. Bentz

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Porphyria cutanea tarda (PCT) is the most common form of hepatic porphyria in the United States, where it is estimated that there are more than 5,000 patients. Unlike other types of porphyria, which are well-defined inherited metabolic disorders, PCT is a syndrome which occurs in association with a variety of different disorders, of which the most common is alcoholic liver disease. The syndrome consists of skin lesions due to photosensitization by porphyrins.

The primary lesion of PCT is a vesicle or blister occurring on the light exposed skin sites in the 4,000 Ang. range. The incidence and magnitude of skin lesions are directly related to sun exposure. Trauma results in erosion and ulceration of the primary lesions. Hypertrichosis and hypermelanosis are particularly prominent on the face.

The treatment of PCT by phlebotomy is currently the treatment of choice. 500 ml. of blood is removed weekly until 2 liters are obtained, following which blood is removed in quantities of 500 ml/month until the urinary total porphyrin content is below 0.5 mg/liter. In addition, protective clothing should be worn to prevent light exposure and the patient should be advised to minimize cutaneous trauma and to abstain from alcohol.

Porphyria cutanea tarda (PCT) is the most common form of hepatic porphyria in the United States, where it is estimated that there are more than 5,000 patients. Unlike other types of porphyria, which are well-defined inherited metabolic disorders, PCT is a syndrome which occurs in association with a variety of different disorders, of which the most common is alcoholic liver disease. The syndrome consists of the association of skin lesions due to photosensitization by porphyrins with a characteristic pattern of porphyrin overproduction, the main feature of which is excessive excretions and storage in the liver of porphyrins with acetic acid side chains. The acute attacks of porphyria, often precipitated by drugs such as the barbiturates, that are an important feature of the other hepatic porphyrias do not occur in PCT according to Elder². Since identical skin lesions may be the only clinical feature in other cutaneous porphyrias, the syndrome is, in effect, defined by its unique pattern of porphyrin overproduction.

The syndrome usually occurs sporadically as an uncommon complication of a number of more common conditions, but cases due to poisoning with polychlorinated aromatic hydrocarbons have been de-

PORPHYRIA CUTANEA TARDA

by
Donald Schellpfeffer*

scribed by Schmid⁷. More than 70% of the patients in most series have had alcoholic liver disease, while at present the administration of estrogen-containing preparations, including the contraceptive pill, is probably the second most common precipitating factor in studies by Haberman³. PCT is particularly frequent where both alcoholism and iron overload are common, as among the Bantu in South Africa. The syndrome is also seen in association with cryptogenic cirrhosis, chronic aggressive (active) hepatitis and other nonalcoholic liver disorders.

Familial PCT is uncommon and its existence has been controversial. Since it has been reported in more than one member of several families by Dehlin (1), this has led to the suggestion that an inherited predisposition may underlie the sporadic form of this syndrome.

The exact enzymatic defect in PCT remains unknown, although Kushner⁶ suggests there is decreased hepatic uroporphyrinogen decarboxylase activity. In vitro studies by Kushner⁶ also revealed marked inhibition of uroporphyrinogen decarboxylase activity with the addition of iron.

Clinically, the primary lesion of PCT is a vesicle or blister occurring on the light exposed skin sites in the 4,000 Ang. range. The incidence and magnitude

* Senior, USD School of Medicine.

of the skin lesions are directly related to sun exposure. Trauma results in erosion and ulceration of the primary lesions. Hypertrichosis and hypermelanosis are particularly prominent on the face. The hypertrichosis is found on the upper part of the cheeks and in the periorbital areas. In advanced cases, atrophy and scarred areas with hypopigmentation and hyperpigmentation may be present. Changes resembling scleroderma appear in 10% of the cases in the V of the neck and dorsum of the hands of severely affected individuals.

Histologically, PCT shows characteristically blisters which are subepidermal, although in older lesions regeneration of the basal cell layer of the epidermis may lead to a vesicle contained entirely within the epidermis. Bullae of PCT show edema of the dermal papillae. In the absence of bullae, only solar degeneration may be seen or degenerated collagen may be found in the corium.

PCT biochemically demonstrates large increases in urinary uroporphyrin and to a lesser degree coproporphyrin. The type I isomers are strikingly elevated. Abnormal levels usually are in excess of 2,000 ug/24 hours. In addition, the usual predominance of urinary coproporphyrin excretion in normal individuals is reversed. For unknown reasons, 25% of the cases of PCT also exhibit diabetes mellitus.

Included in the differential diagnosis of PCT are the early stages of epidermolysis bullosa, mixed porphyria cutanea tarda and diverse endocrine disturbances. Drug induced photosensitivity disorders must also be considered.

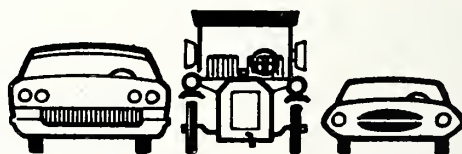
The treatment of PCT by phlebotomy was pioneered by Ippen⁷ and currently is the treatment of choice. 500 ml. of blood is removed weekly until 2 liters are obtained, following which blood is removed in quantities of 500 ml/month until the urinary total porphyrin content is below 0.5 mg/liter. Initially the mechanism of action of phlebotomy appeared to be related to a reduction in excessive iron stores, but Ippen⁷ noted that equivocal results with iron chelators preclude the explanation that removal of iron is the only factor responsible for the improvement of the porphyria symptoms. He suggests that phlebotomy results in the withdrawal of pyrroles, in the form of hemoglobin, which would channel the porphyrin precursors into the physiological biosynthesis of hemoglobin.

Other modalities of treatment for PCT include the use of chloroquine as advocated by Kowertz⁵, or the use of chelating and alkalating agents. Abstinence from alcohol has produced excellent results. In addition, protective clothing should be worn to

prevent light exposure and the patient should be advised to minimize cutaneous trauma.

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Current Progress in Obstetrics and Gynecology

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Lecture #7

SEQUELAE OF INCOMPLETE GYNECOLOGIC OPERATIONS: II. THE UTERUS & CERVIX

by

Brooks Ranney, M.D.*

INTRODUCTION:

The initial article in this series of studies, concerning sequelae of "incomplete gynecologic operations" dealt with operations performed upon uterine tubes.¹ Experience, and the statistics in that study demonstrated that the retained uterus and cervix provide the most common sites for abnormalities which require subsequent definitive gynecologic operations. The statistics in this paper reaffirm this finding.

Likewise, experience, and the statistics in this paper, show that suspension of the uterus to the abdominal wall often protects poorly, or not at all, against present or subsequent forces of pelvic sagging or prolapse.

Additionally, a large majority of women who need secondary definitive gynecologic operations, subsequent to suspension of the uterus to the abdominal wall, complain bitterly of a sharp, sticking or dragging-down lower abdominal pain which has developed since the operation at the site of the uterine suspension.

These and other factors, and occasionally helpful alternative methods of treatment, have been studied, and are reported in this second article, which deals specifically with incomplete *uterine* operations.

The infrequent need for myomectomy, and its subsequent sequelae will be reported in a separate article.²

MATERIALS AND METHODS:

This is a study of 191 patients upon whom "incomplete" uterine operations were performed in South Dakota or Nebraska hospitals.

Among these, 141 patients were first seen by us subsequent to their initial operations because respective pelvic abnormalities caused incapacitating symptoms.

The remaining 50 young women had had "incomplete" uterine operations, performed by the author, during the past 30 years, as supplements to other operative procedures, which were performed during treatment for infertility.

Punch cards, office records, operative reports, pathology reports, and some microscopic sections have been studied. There are notable individual variations, but these 191 patients are best studied in three groups, based upon their original uterine operations.

DATA AND EVALUATION:

1. Subtotal Hysterectomy:

Between the years 1937-1973, 59 patients had had the corpus of the uterus, but **not the cervix** removed. When questioned, these patients stated that indications for these abdominal subtotal hysterectomies were fibroids-42, abnormal uterine bleeding-17, ovarian neoplasia-7, pelvic relaxations-9, pelvic inflammatory disease-1, and carcinoma of the endometrium-1.

At the time of abdominal subtotal hysterectomy, the youngest patient had been 26; the oldest, 62; the average age, 44.2 years. During a time interval of

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one to 32 years, these 59 patients retained or developed the symptoms listed in Table I, for which they sought gynecologic evaluation and treatment. All had pain or discomfort; 22 complained of spotting-bleeding; and 27 had bladder or bowel dysfunction.

Table I

**Subsequent Symptoms
After Prior Abdominal Subtotal Hysterectomy**

(59 Patients)

Pain:	
Pelvic	18
Abdominal	7
Back	10
"Dragging down"	21
Dyspareunia	4
Bleeding:	
Spotting-bleeding	22
Dysfunction:	
Stress urinary incontinence	14
Difficulty passing bowels	23

Based upon these symptoms, upon abnormal pelvic findings, and upon indicated biopsy and curettage, definitive operations were recommended. Findings during pelvic examinations, during subsequent operations, and during pathologic examinations of excised tissues are summarized in Table II. It is not surprising that most of the abnormal findings were in the potentially dangerous cervical stump, or in vaginas which were sagging due to previous stretching during childbirth. Nine of these women (15.2%) had significant cervical neoplasia; 3 had cervical carcinoma. Another 38 (64.4%) had incapacitating pelvic relaxations.

Table II

**Findings at Subsequent Operations
After Prior Abdominal Subtotal Hysterectomy**

(59 Patients)

Cervix:	
Descensus	18
Prolapse	8
Procidentia	5
Cervicitis-hypertrophy	23
Polyp	4
Dysplasia	6
Preinvasive carcinoma	2
Carcinoma, Stage I, b	1
Vagina:	
Cystocele	28
Enterocoele	14
Rectocele	38
Lacerated perineum	4
Ovary:	
Inflammatory cysts	3
Serous cystadenoma	1
Thecoma	1
Pelvis:	
Adhesions	10
Endometriosis	1

Needed operative procedures are listed in Table III; 47 operations were vaginal, and 12 were through abdominal incisions. Certainly 56 of these second operations, and probably all 59 of them, could have been avoided if the original operator had (1) removed the cervix, (2) repaired individual vaginal relaxations, and (3) performed indicated adnexal procedures.

Table III

**Operative Procedures at Subsequent Operations
After Prior Abdominal Subtotal Hysterectomy**

(59 Patients)

Vaginal:	
Excision cervical stump	47
Anterior colpoplasty	28
Repair enterocele	14
Posterior colpoperineoplasty	38
Colpocleisis	2
Abdominal:	
Excision cervical stump	12
Ovarian function retained	2
Both ovaries removed	10

Ever since the time of these definitive operations, 35 of these patients have been evaluated by periodic pelvic examinations from 28 to 3 years—until the present time, or until death; 3 have died of other causes. The remaining 24 patients have been examined periodically since their second operations during intervals ranging from 24 to 2 years. To date, none of the 59 patients has required another pelvic operation.

2. Uterine Suspension to the Abdominal Wall (Gilliam):

Between the years 1921 and 1971, 82 patients had had the uterus "suspended" to the abdominal wall by sewing round ligaments into the rectus abdominis muscle and fascia (Gilliam procedures). Unilateral oophorectomy had been performed in 3 of these patients, and vaginal plasty had been performed in 2. When questioned, some patients were not certain why the uterine suspensions had been performed, but many stated that it had been done to correct "sagging pelvic organs," and others indicated it had been done because the uterus "fell backwards."

At the time of their uterine suspensions, the youngest was 21, and the oldest was 61 years old; average age, 38.9 years. Three were nulligravidas, but 79 women had had 283 babies (an average of about 3.5 babies for each patient).

During a time interval of 3 to 32 years after uterine suspension (average, 14.8 years), these patients retained or developed the symptoms listed in Table IV, for which they sought gynecologic evaluation and treatment.

Table IV

**Subsequent Symptoms
After Prior Uterine Suspension to Abdominal Wall
("Gilliam"—82 Patients)**

Pain	
Low abdominal, sticking, dragging	72
Vaginal, dragging	48
Pelvic	27
Back	26
Dysmenorrhea	5
Deep dyspareunia	4
Bleeding:	
Hypermenorrhea	21
Spotting	28
Dysfunction:	
Stress urinary incontinence	28
Difficulty passing bowels	39

Most patients (87.8%) complained of a sharp, sticking or dragging-down pain of the lower abdomen under the lower portion of their old suspension incisions. This pain was often aggravated by the vertical position and work, and tended to be relieved by the horizontal position and rest.

A majority of these patients (58.5%) also had notable vaginal, dragging pain. More than half (59.8%) had abnormal uterine bleeding. Many (69.5%) complained of urinary or bowel dysfunction.

Based upon these symptoms, upon abnormal pelvic findings, and upon indicated biopsy and curettage, definitive operations were recommended. The findings, during examination, subsequent operation, and pathologic study of excised tissues, are noted in Table V. All of these patients had uterine abnormalities, and a majority had abnormalities of the cervix. Sixteen patients had neoplasia of the endometrium (1 adenocarcinoma), 11 patients had neoplasia of the cervix (2 carcinomas), and 3 patients had ovarian neoplasia.

Anterior abdominal wall (Gilliam) suspension of the uterus contributes toward a yawning culdesac. Possibly, as a result, 27 of the 39 enteroceles (69%) were labeled as being "large"—the largest being about 12 x 11 cm. in size. It is surprising that 13 obstetrically lacerated perineums, with obvious symptoms and findings, had not been repaired during patients' first pelvic operations.

Smooth muscle and connective tissue of paramesonephric origin make poor "suspenders," because their inherent capacity to stretch and adapt is further stimulated by local effects of ovarian and pregnancy hormones. Therefore, it is not surprising that 37 of these suspended uteri and cervixes (45%) had become elongated more than 12 cm. The longest measured 32 cm. from the uterine fundus to the external os of the cervix, and the average length

Table V

**Findings at Subsequent Operations
After Prior Uterine Suspension to Abdominal Wall
("Gilliam"—82 Patients)**

Uterus:	
Descensus	21
Prolapse	27
Procidentia	4
Fibroids	30
Adenomyosis	16
Hypertrophy	23
Endometrial polyp	14
Cystic hyperplasia	11
Adenomatous hyperplasia	4
Adenocarcinoma	1
Cervix:	
Decubitus ulcer	16
Cervicitis-hypertrophy	27
Dysplasia	9
Preinvasive carcinoma	1
Carcinoma, Stage I, b	1
Vagina:	
Cystocele	46
Enterocoele	39
Rectocele	59
Lacerated perineum	13
Ovary:	
Inflammatory cysts	1
Serous cystadenoma	2
Endometriosis	4
Fibroma	1
Pelvis:	
Adhesions	82
Endometriosis	3
Pelvic hernias	10
Embryologic cysts	4

was 17 cm. The effects of gravity, and of prior pelvic relaxations, had stretched, and in some instances, had attenuated these adaptable organs during the time since abdominal suspension of the uterine fundus.

In spite of these 82 abdominal wall suspensions of the fundus, 52 patients (63.4%) had developed some cervical sagging; 37 protruded through the vulva, 4 of these had procidentia, and 16 (19.5%) had been sagging through the vulva, long enough to develop decubitus ulcers of the cervix.

It is obvious that uterine suspension to the abdominal wall is not well adapted to treat the sagging uterus, cervix, or vagina!

Only 12 of these women (14.6%) became pregnant and delivered babies during the intervals between operations.

The necessary procedures of our definitive gynecologic operations have been listed in Table VI. Probably all, or nearly all, of these second operations could have been avoided if the original operator (1) had removed the uterus and cervix, (2) repaired individual vaginal relaxations, and (3) performed indicated adnexal procedures, instead of performing a uterine suspension to the abdominal

Table VI

**Operative Procedures at Subsequent Operations
After Prior Uterine Suspension to Abdominal Wall
("Gilliam"—82 Patients)**

Abdominal:	
Abdominal total hysterectomy	48
Abdominal repair enterocele	17
Anterior bladder-neck suspension	7
Ovarian function retained	16
Both ovaries removed	32
Vaginal:	
Vaginal hysterectomy	34
Anterior colpoplasty	39
Repair enterocele	22
Posterior colpoperineoplasty	59

wall.

Despite adhesions to the abdominal wall and to the bladder peritoneum, caused by the prior suspensions, it was possible to remove 34 of these sagging uteri vaginally, without unusual operative "gymnastics" (41.5%). However, 48 were best removed through abdominal incisions.

Since these 82 definitive operations, 51 of these patients have been evaluated by periodic pelvic examinations from 27 to 2 years—until the present time, or until death; 4 have died of other causes. The remaining 31 patients have been examined periodically since their second operations during intervals ranging from 20 to 2 years. To date, none of the 82 patients has required another pelvic operation. Those who have been examined have satisfactory bladder, bowel, and sexual function.

3. Uterine Suspension (Modified Baldy-Webster):

Careful study of young, infertility patients may sometimes disclose the major problem to be either pelvic endometriosis or multicystic ovaries (Stein-Leventhal). Such patients sometimes may be treated most effectively by conservative operations, either (1) resection of endometriosis,³ or (2) wedge-resection from those multicystic ovaries which have not responded to hormone therapy.⁴ When the culdesac and/or ovaries contain many, re-sutured peritoneal surfaces, at the end of such conservative operations, the gynecologist sometimes may elect to move the uterine corpus forward, hoping thus to decrease the development of ovarian and tubal adhesions deep in the culdesac during initial weeks of healing. Such relatively unusual patients provide the quite rare indications for uterine suspensions in modern gynecology.

Temporary anteversion of the uterus may be achieved by judiciously "reefing," or **shortening** each round ligament with a firm, non-absorbable suture, which is then sewed into the anterior uterine wall and tied firmly. This will hold the uterus for-

ward during the first few weeks of postoperative healing.

When more permanent anteversion of the uterus is desired, we prefer to use a modified Baldy-Webster technique. This includes three steps: (1) the peritoneal reflection of the bladder is freed from the cervix, and at a convenient time during the operation, is sutured higher on the uterine corpus; (2) relaxed round ligaments are drawn through the avascular peritoneum of the broad ligament with a blunt forceps, and are sutured behind the corpus of the uterus to form a "hammock," which anteverts the fundus; (3) last, and probably most importantly, the uterosacral ligaments are shortened and plicated into the posterior wall of the cervix with sutures, drawing the cervix backwards in the pelvis. One must be careful not to jeopardize ovarian or uterine blood supply, nor to distort ureters with these sutures. No defect should remain in the broad ligament, through which small bowel might herniate.

Anteversion of a previously retroverted uterus by these techniques will usually survive subsequent pregnancy, and rarely causes the lower abdominal pain, which is noted so commonly following suspension of the uterus to the abdominal wall (compare Table IV with Table VII).

Among 3,205 major gynecologic operations performed by the author between the years 1948-1977, we have chosen conservative resection of endometriosis to enhance fertility in 128 patients, and wedge resection from multicystic ovaries to enhance fertility in 22 patients. Among these 150 patients we have supplemented their major procedure with either a round ligament "reefing," or a modified Baldy-Webster suspension, in 50 patients (one third of these infertility patients, or 1.56% of the 3,205 major gynecological operations). (To prevent potentially recurring dysmenorrhea and/or dyspareunia, we also performed presacral neurectomy for 12 patients from whom culdesac endometriosis could not be resected completely.)

All of these patients have had obstetric-gynecologic care by us up to the present time (29 years to 1 year). At times ranging from 5 to 22 years after their suspension operations, 17 patients (34%) have needed second major gynecologic operations. However, during the intervening years, 13 of these 17 patients (76.5%) have had 27 babies. Also, 25 of the 33 patients (75.8%) who did not need a second operation have had 41 babies.

Symptoms for which these 17 patients sought gynecologic examinations are itemized in Table VII.

Findings, during examination, biopsy, curettage, operation, and examination of excised tissues, are

Table VII

**Subsequent Symptoms
After Prior Baldy-Webster Uterine Suspensions
(17 Patients)**

Pain:	
Pelvic	11
Abdominal	3
Back	5
Vaginal dragging	2
Dysmenorrhea	5
Deep dyspareunia	3
Bleeding:	
Hypermenorrhea	4
Spotting	4
Dysfunction:	
Stress urinary incontinence	1
Difficulty passing bowels	4

Table VIII

**Findings at Subsequent Operations
After Prior Baldy-Webster Uterine Suspensions
(17 Patients)**

Uterus:	
Descensus	3
Prolapse	2
Fibroids	10
Adenomyosis	2
Hypertrophy	4
Cystic hyperplasia	1
Adenomatous hyperplasia	1
Adenocarcinoma	1
Cervix:0	
Vagina:	
Cystocele	2
Enterocoele	4
Rectocele	6
Ovary:0	
Pelvis:	
Adhesions	14
Endometriosis	3

summarized in Table VIII. Again, it is obvious that the retained uterus is the major site of these abnormalities, all of which had developed during the 5 to 22 years between operations. One patient had developed adenocarcinoma of the endometrium. Additionally, 6 patients had developed obstetric relaxations which were symptomatic.

Definitive operative procedures for these 17 patients are listed in Table IX.

Table IX

**Operative Procedures at Subsequent Operations
After Prior Baldy-Webster Uterine Suspensions
(17 Patients)**

Abdominal:	
Abdominal total hysterectomy	15
Abdominal repair enterocele	2
Ovarian function retained	9
Both ovaries removed	6
Vaginal:	
Vaginal hysterectomy	2
Anterior colpoplasty	2
Repair enterocele	2
Posterior colpoperineoplasty	6

One notes a much lower incidence of prolapse and symptomatic vaginal relaxations, and consequent vaginal operations, among this group of patients (Tables VIII and IX) when compared to those patients who had had uterine suspensions to the abdominal wall (Tables V and VI). However, this difference probably reflects varying methods of obstetric care and delivery techniques, instead of a specific advantage for the Baldy-Webster suspension operation. It is most unlikely that uterine suspension of any type can prevent eventual pelvic relaxations and prolapse which have been caused by obstetric or coital trauma, and the forces of gravity.

COMMENTS:

A. Subtotal Hysterectomy:

Several decades ago, proponents of abdominal subtotal hysterectomy presented several arguments in favor of the incomplete operation: (1) the cervix was the "keystone" of the vagina—remove it, and the vagina would prolapse; (2) cervical mucous was needed to lubricate the vagina during coitus; (3) coital response was decreased if the cervix had been removed, etc. However, time and experience have shown (1) that those cardinal ligaments which have supported adequately, the uterus, cervix, and upper two thirds of the vagina, are easily able to support the postoperative vaginal vault; (2) that vaginal mucosa remains supple and moist as the result of adequate ovarian hormones, rather than cervical mucous; and (3) that the minimally innervated cervical stump does not facilitate coital response, although it may contribute to deep dyspareunia, if it is infected or adherent.

With this knowledge, and with increasing operative experience, fewer subtotal hysterectomies have been performed, so that, today, subtotal hysterectomy is only performed if removal of the cervix would immediately jeopardize the life or health of the patient. Among more than 3,000 major gynecologic operations, performed between 1948 and 1978, the cervix has been removed during hysterectomy in all patients except one—during a "de-bulking" operation on a patient whose entire culdesac and endopelvic fascia were infiltrated thickly with ovarian cancer, Stage III.

The uterine cervix may be (1) a source of infection, dysplasia, and cancer, (2) the point of prolapse, and/or (3) a frequent cause of dyspareunia. Therefore, it should be removed routinely with the corpus of the uterus during hysterectomy. It was disconcerting to discover that the most recent subtotal hysterectomies, reported here, had been performed during the latter 1960's, during 1970, and during 1973.

B. Uterine Suspensions:

As women grow into their mature years, the uterus becomes an increasingly frequent site of bleeding, pain, tumor, or cancer. Probably no form of uterine suspension will prevent overt or impending prolapse. Uterine suspension to the lower abdominal wall (Gilliam) often causes severe pain where the fundus is adherent to the abdomen, and this pain is magnified by hypertrophy or tumor of the uterus, or by increasing vaginal prolapse, in mature women. Because smooth muscle and connective tissue of paramesonephric duct origin have a capacity to stretch almost indefinitely, the round ligaments, uterus, and cervix are very poor suspensory organs. For these and other reasons, Gilliam suspensions should not be performed for mature women; rather, abnormal uteri should be removed by vaginal, or abdominal total hysterectomy, and indicated supplementary procedures should be performed during the same operation.

Only rarely, it may be judged important to move a retroverted uterine corpus forward, after resection of endometriosis or wedge resection of multicystic ovaries, in young, infertility patients, hoping to allow healing, without adhesions. For reasons presented in this article, we prefer to use either a temporary round ligament "reefing," or a more permanent modified Baldy-Webster suspension procedure for these rare patients.

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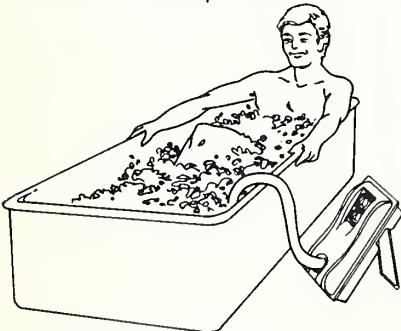
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Mrs. P. K. Aspaas, Dell Rapids, was elected president of the P.E.O. during the state convention held in Aberdeen.

* * * *

M. C. Thompson, D.O., Watertown, was installed as grand counselor of the South Dakota Jurisdiction of the Order of United Commercial Travelers of America at the 67th annual state convention in Mitchell. This is a fraternal benefit service society which provides aid to retarded citizens, cancer education and youth enrichment programs.

* * * *

Featured speaker at the South Dakota Affiliate of the American Diabetes Association Annual Meeting held in Pierre was **J. Michael McMillin, M.D.**, Sioux Falls, who spoke on "Research in Diabetes."

* * * *

At the annual corporate meeting of Blue Cross of Western Iowa and South Dakota **D. G. Ortmeier, M.D.**, Sioux Falls, was elected to the board of directors.

* * * *

Agnes Keegan, M.D., former Aberdeen physician, died May 17 in Oak Park, Illinois. Dr. Keegan practiced in Aberdeen from 1936 until her retirement in 1967. She was a honorary member of the Aberdeen District and State Medical Association.

A. A. Lampert, M.D., Rapid City, was guest speaker at the annual membership tea of the Rapid City Regional Hospital Auxiliary.

* * * *

The South Dakota Lung Association and Sioux Valley Hospital presented a program on "The Use of Relaxation and Visual Imagery in Children With Asthma" at which time **Rodney Parry, M.D.**, Sioux Falls, discussed the causes of asthma and what happens during an asthma attack.

* * * *

H. Lee Ahrlin, M.D., Rapid City, was married on April 18 to Robin Lynn Nash. Dr. Ahrlin is an orthopedic surgeon in Rapid City, and his wife is a nurse at Rapid City Regional Hospital.

* * * *

Dr. and Mrs. Richard Leander, Sioux Falls, were elected international directors of the Great Plains Regional Sertoma and La Sertoma clubs at a conference in Waterloo, Iowa.

* * * *

E. H. Heinrichs, M.D., Vermillion, presented the film, "The Cry of Pain" at a workshop on child abuse and neglect held in Watertown.

* * * *

New officers for the Yankton District Medical Society include president, **John Willcockson, M.D.**; vice president, **Philip Blum, M.D.**; secretary, **Harold Fletcher, M.D.**; and treasurer, **Jay Hubner, M.D.**

* * * *

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L. E. Savage, M.D., Yankton, died on May 3 at age 49. Dr. Savage was a graduate of the University of South Dakota School of Medicine and received his M.D. degree from the University of Chicago School of Medicine in 1956. He interned at Sacred Heart Hospital, Yankton, and completed the surgical residency program there also. He was in private practice with the Yankton Clinic and affiliated with the Surgical Residency program at Sacred Heart Hospital. He was a member of the Yankton District, South Dakota State Medical Association and the American Medical Association.

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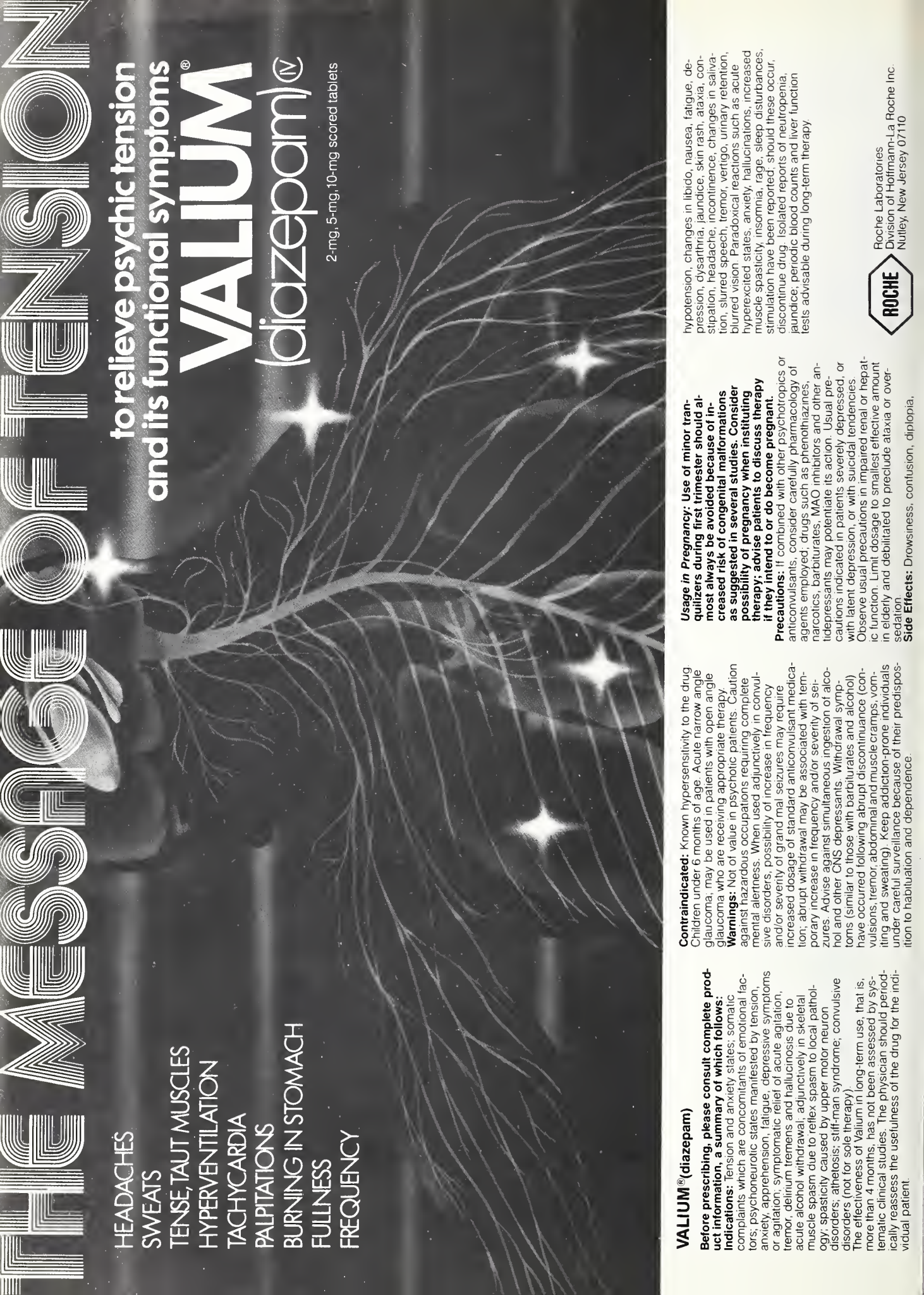


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Arlan Zastrow, M.D.
Loren Amundson, M.D.
Werner Klar, M.D.
D. N. Fedt, M.D.
David Boyer, M.D.
C. B. Gwinn, M.D.
Jay Hubner, M.D.
Charles Loos, M.D.
Harold Fletcher, M.D.
R. E. Shaskey, M.D.
T. A. Hohm, M.D.

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Future Meetings

September

Female Incontinence—Neuromuscular Dysfunction of the Lower Urinary Tract, Mayo Mem. Aud., U. of Minn., Minneapolis, MN, Sept. 14-15. Fee: \$250. Contact: Off. of CME, Box 293, Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Directions in Adolescent Psychiatry, Health Sciences Unit A., Rm 2-620, U. of Minn., Minneapolis, MN, Sept. 15-17. Fee: \$75. Contact: Off. of CME, Box 293, Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Pulmonary Medicine—An Update for the Clinician, The Mark Resort, Vail, CO, Sept. 18-21. Fee: ACCP members, \$170; non-members, \$190. 19 1/4 hrs. Category I AMA credits. Contact: Dale S. Braddy, M.S., Dir. of Ed., American College of Chest Physicians, 911 Busse Highway, Park Ridge, IL 60068.

Topics in Geriatrics Medicine, Mayo Mem. Aud., U. of Minn., Minneapolis, MN, Sept. 20-21. Contact: Off. of CME, Box 293, Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Treatment of Family Sexual Abuse, U. of Minn., Minneapolis, MN, Sept. 20-22. Fee: \$100. Contact: Off. of CME, Box 293, Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Intensive Behavior Modification Workshop, Minneapolis, MN, Sept. 22. Contact: Behavior Modification Technology, P.O. Box 3251, Tuscaloosa, AL 35401.

Neurology, Mayo Foundation Outreach Seminar, McKennan Hospital Aud., Sioux Falls, SD, Sept. 22-23. Category I AMA & AAFP credits. Contact: Sec., Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101.

Internal Medicine Review, Mayo Mem. Aud., U. of Minn., Minneapolis, MN, Sept. 27-29. Contact: Off. of CME, Box 293, Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Sexual Attitude Reassessment Seminar, U. of Minn., Minneapolis, MN, Sept. 29-30. Contact: Off. of CME, Box 293, Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Basis for Making Therapeutic Decisions, U. of Texas Health Science Center, 5323 Harry Hines Blvd., Dallas, TX, Sept. 29-30. Fee: \$150. 14 hrs. Category I AMA credits.

Contact: Norma Wilcox, U. of Texas Health Science Center, 5323 Harry Hines Blvd., Dallas, TX 75235.

October

6th Annual Midwest Conference on Chest Diseases, Omaha Hilton Hotel, Omaha, NE, Oct. 8-10. Fee: \$80. 14 1/2 hrs. Category I AMA & AAFP credits. Contact: Div. of CME, Creighton U., Omaha, NE 68178.

Primary Care Review—Home Study Course, Georgia Academy of Family Physicians. AAFP credits: 30 prescribed hrs., 70 elective hrs. 100 hrs. Category I AMA credits. Enrollment deadline: Oct. 9. Course begins: Jan. 15, 1979. Contact: Ex. Dir., GAFFP Educational Foundation, 11 Corporate Sq., Suite 205, Atlanta, GA 30329.

International Symposium on Infant and Child Feeding, Michigan State U., East Lansing, MI, Oct. 15-19. Contact: Conf. Coord., The Kellogg Center, Rm. 23, Michigan State U., East Lansing, MI 48824.

Family Practice Review, YMCA of the Rockies, Estes Park, CO, Oct. 16-21. Fee: \$175. Contact: CME, U. of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, CO 80262.

(continued on page 47)

Transactions Of The

South Dakota State Medical Association

Ninety-Seventh Annual Meeting

June 8, 9, 10, 11, 1978

1978-1979 OFFICERS

President

Russell Harris, M.D. Rapid City
 President-Elect
 Duane Reaney, M.D. Yankton
 Vice President
 Winston Odland, M.D. Aberdeen
 Secretary-Treasurer (1979)
 Joseph Hamm, M.D. Sturgis
 AMA Delegate (1980)
 William R. Taylor, M.D. Aberdeen
 AMA Alternate Delegate (1980)
 Gerald E. Tracy, M.D. Watertown
 Chairman of the Council
 Bruce Lushbough, M.D. Brookings
 Speaker of the House of Delegates
 Durward Lang, M.D. Sioux Falls
 Councilor at Large
 James Ryan, M.D. Mobridge

COUNCILORS

First District (Aberdeen)

B. C. Gerber, M.D. (1980) Aberdeen
 Second District (Watertown)
 G. Robert Bartron, M.D. (1980) Watertown
 Third District (Brookings-Madison)
 Bruce Lushbough, M.D. (1981) Brookings
 Fourth District (Pierre)
 R. C. Jahraus, M.D. (1980) Pierre
 Fifth District (Huron)
 David Buchanan, M.D. (1981) Huron
 Sixth District (Mitchell)
 Richard G. Gere, M.D. (1981) Mitchell
 Seventh District (Sioux Falls)
 W. O. Rossing, M.D. (1981) Sioux Falls
 Paul K. Aspaas, M.D. (1980) Dell Rapids
 John F. Barlow, M.D. (1980) Sioux Falls
 (1979)
 Eighth District (Yankton)
 Gordon Held, M.D. (1979) Yankton
 Frank Messner, M.D. (1980) Yankton
 Ninth District (Rapid City)
 Roger Millea, M.D. (1981) Rapid City

W. E. Jones, M.D. (1979) Sturgis
 A. J. Barrett, M.D. (1980) Rapid City
 Tenth District (Rosebud)
 R. L. Stiehl, M.D. (1979) Winner
 Eleventh District (Northwest)
 James Wunder, M.D. (1979) Mobridge
 Twelfth District (Whetstone Valley)
 Eldon Bell, M.D. (1979) Webster
 Student Representative
 Barbara Bell Vermillion

ALTERNATE COUNCILORS

First District (Aberdeen)

G. H. Steele, M.D. (1980) Aberdeen
 Second District (Watertown)
 James Larson, M.D. (1980) Watertown
 Third District (Brookings-Madison)
 A. A. Lampert, Jr., M.D. (1981) Madison
 Fourth District (Pierre)
 M. R. Cosand, M.D. (1980) Pierre
 Fifth District (Huron)
 G. Robert Bell, M.D. (1981) DeSmet
 Sixth District (Mitchell)
 C. D. Monson, M.D. (1981) Parkston
 Seventh District (Sioux Falls)
 Michael Pekas, M.D. (1981) Sioux Falls
 J. S. Devick, M.D. (1980) Colton
 Richard Tschetter, M.D. (1980) Sioux Falls
 (1979)
 Eighth District (Yankton)
 (1979)
 (1980)
 Ninth District (Rapid City)
 N. R. Whitney, M.D. (1979) Rapid City
 Bruce Allen, M.D. (1980) Rapid City
 (1981)
 Tenth District (Rosebud)
 E. P. Sweet, M.D. (1979) Burke
 Eleventh District (Northwest)
 L. M. Linde, M.D. (1979) Mobridge
 Twelfth District (Whetstone Valley)
 Joseph Kass, M.D. (1979) Rosholt
 Student Representative
 Dan Heineman Vermillion

1978-1979 COMMISSIONS

COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

Stephen Haas, M.D., Chairman (1980) Rapid City
V. Janavs, M.D. (1981) Milbank
Ronold Tesch, M.D. (1981) Brookings
John Elston, M.D. (1981) Rapid City
R. W. Honke, M.D. (1981) Wagner
Robert McGee, M.D. (1981) Aberdeen
C. L. Swanson, M.D. (1980) Pierre
Bill Church, M.D. (1980) Sioux Falls
L. W. Karlen, M.D. (1980) DeSmet
Patrick McGreevy, M.D. (1980) Sioux Falls
R. G. Gere, M.D. (1979) Mitchell
A. A. Lampert, M.D. (1979) Rapid City
R. B. Henry, M.D. (1979) Brookings
R. I. Porter, M.D. (1979) Yankton
J. B. Gregg, M.D. (1979) Sioux Falls

COMMISSION ON INTERNAL AFFAIRS, COMMUNICATIONS AND LIAISON

Lawrence Finney, M.D., Chairman (1981) Sioux Falls
Richard Tschetter, M.D. (1981) Sioux Falls
C. B. Gwinn, M.D. (1981) Rapid City
John Edwards, M.D. (1981) Madison
William Quick, M.D. (1981) Yankton
C. R. Stoltz, M.D. (1980) Watertown
Arlan Zastrow, M.D. (1980) Huron
Ray Strand, M.D. (1980) Rapid City
Werner Klar, M.D. (1980) Flandreau
R. E. Van Demark, M.D. (1980) Sioux Falls
Harvard Lewis, M.D. (1979) Mitchell
T. A. Hohm, M.D. (1979) Huron
Harold Fletcher, M.D. (1979) Vermillion
Jay Hubner, M.D. (1979) Yankton
J. F. Barlow, M.D. (1979) Sioux Falls

COMMISSION ON MEDICAL SERVICE

Howard Saylor, M.D., Chairman (1981) Huron
Charles Hollerman, M.D. (1981) Yankton
Warren Jones, M.D. (1981) Sioux Falls
Guy Tam, M.D. (1981) Sioux Falls
Larry Ebbert, M.D. (1981) Rapid City
Lowell Swisher, M.D. (1980) Kadoka
J. A. Rud, M.D. (1980) Watertown
Roscoe Dean, M.D. (1980) Wessington Springs
J. A. Eckrich, Jr., M.D. (1980) Aberdeen
Anthony Javurek, M.D. (1980) Deadwood
Kennon Broadhurst, M.D. (1979) Aberdeen
Curtis Wait, M.D. (1979) Brookings
Anton Petres, M.D. (1979) Salem
C. D. Monson, M.D. (1979) Parkston
John Hoskins, M.D. (1979) Sioux Falls

COMMISSION ON SCIENTIFIC MEDICINE

J. C. Larson, M.D., Chairman (1979) Watertown
Loren Amundson, M.D. (1981) Sioux Falls
G. Robert Bell, M.D. (1981) De Smet
R. J. Foley, M.D. (1981) Tyndall
Joseph Kass, M.D. (1981) Rosholt
R. B. Leander, M.D. (1981) Sioux Falls
Juan Chavier, M.D. (1980) Aberdeen
T. A. Angelos, M.D. (1980) Canton
R. R. Thornton, M.D. (1980) Yankton
Robert Ferrell, M.D. (1980) Rapid City
R. D. Bloemendaal, M.D. (1980) Rapid City
Larry Sittner, M.D. (1979) Sioux Falls
A. J. Janusz, M.D. (1979) Aberdeen
B. T. Otey, M.D. (1979) Flandreau
Gene Koob, M.D. (1979) Sioux Falls

PROFESSIONAL LIABILITY COMMISSION

Michael Rost, M.D., Chairman (1980) Sioux Falls
Dale Berkebile, M.D. (1981) Rapid City
E. W. Sanderson, M.D. (1981) Sioux Falls
Morris Radack, M.D. (1981) Yankton
James Hovland, M.D. (1980) Aberdeen
Donald Kelley, M.D. (1980) Rapid City
Frank Alvine, M.D. (1979) Sioux Falls
R. G. Gere, M.D. (1979) Mitchell
A. A. Lampert, Jr., M.D. (1979) Madison

CREDENTIALS COMMISSION AND EXECUTIVE COMMISSION

Russell Harris, M.D., Rapid City
Duane Reaney, M.D., Yankton
Winston Odland, M.D., Aberdeen
Joseph Hamm, M.D., Sturgis
Durward Lang, M.D., Sioux Falls
James Ryan, M.D., Mobridge
Bruce Lushbough, M.D., Brookings

GRIEVANCE COMMISSION

T. H. Sattler, M.D., Chairman (1979) Yankton
R. E. Van Demark, M.D. (1980) Sioux Falls
G. E. Tracy, M.D. (1981) Watertown
Fred Leigh, M.D. (1982) Huron
James Ryan, M.D. (1983) Mobridge

LONG RANGE PLANNING COMMITTEE

T. H. Sattler, M.D., Chairman, Yankton
Karl Wegner, M.D., Vermillion
C. E. Tesar, M.D., Rapid City
E. H. Heinrichs, M.D., Vermillion
Dennis Johnson, M.D., Sioux Falls
H. J. Stensrud, M.D., Madison
Michael Pekas, M.D., Sioux Falls
W. Nicol Guddal, M.D., Watertown

REPORT OF THE BUDGET AND AUDIT COMMITTEE

The Committee met on June 8, at the Ramada Inn, Sioux Falls. The following members were present for roll call: Drs. James Ryan, Russell Harris, L. W. Finney, Bruce Lushbough, W. B. Odland, and Fred Leigh.

The Committee reviewed the audit report prepared by Broeker Hendrickson & Company for the fiscal year May 1, 1977 to April 30, 1978. A discussion was held on the investment of reserve funds. No action was taken. Dr. Ryan moved acceptance of the audit report. The motion was seconded and carried. The meeting adjourned at 5:45 p.m.

FIRST COUNCIL MEETING MINUTES

7:30 p.m.

Thursday, June 8, 1978

Ramada Inn

Sioux Falls, South Dakota

The meeting was called to order by Bruce Lushbough, M.D., Chairman. Those present for roll call were Doctors James Ryan, Russell Harris, Duane Reaney, W. R. Taylor, G. E. Tracy, Bruce Lushbough, Winston Odland, Fred Leigh, B. C. Gerber, G. Robert Bartron, R. C. Jahraus, David Buchanan, R. G. Gere, W. O. Rossing, Durward Lang, P. K. Aspaas, John F. Barlow, Frank Messner, Roger Millea, A. J. Barrett, R. L. Stiehl, L. M. Linde, Eldon Bell, student representative Dan Heineman, and Commission Chairmen, Dr. Howard Saylor and Dr. J. C. Larson. Dr. Buchanan moved to accept the minutes of the previous meeting as published. The motion was seconded and carried.

1. LETTER FROM PRESIDENT OF THE OPTOMETRIC SOCIETY. Dr. Seaman presented information on his thoughts

and recommendations regarding the practice of optometry for the Council's consideration. The Council reviewed their previous action regarding this matter along with discussions between ophthalmologists and members of the legislative committee which transpired during the 1978 legislative session. Dr. Gerber presented the statement adopted by the American College of Surgeons regarding the practice of optometry and the use of drugs by optometrists. Following a lengthy discussion, Dr. Barrett moved that the South Dakota State Medical Association condemn the use of drugs by anyone other than licensed physicians and noted that this is not a dispute between ophthalmologists and optometrists but optometry intruding into the field of medical practice and as such should be decried. The motion was seconded. Dr. Leigh moved to amend the motion to state that between now and the second Council meeting the executive secretary consult with legal counsel to get the properly worded motion for consideration and vote at the second Council meeting. The motion was seconded and failed. The original motion carried.

2. VOLUNTARY EFFORT COMMITTEE. Mr. Johnson reported that Dr. Ryan and Dr. Harris have appointed five Medical Association members to serve on the Voluntary Effort Committee along with five members from the Hospital Association.

3. LCR COST CONTAINMENT STUDY. Mr. Johnson reported that the Legislative Research Council will hold five days of hearings before formulating a report for the 1979 legislative session.

4. REPORT ON USD SCHOOL OF MEDICINE PHYSICIAN EXTENDER PROGRAM. Dr. Robert Hayes reviewed this report which had been distributed to the Council members previously. He stated this report would be presented to the Legislature for their information and consideration. The Council raised a number of questions and concerns and following lengthy discussion Dr. Gerber moved that the Council receive the report on the Physician Extender Program presented by Dr. Hayes for information only. The motion was seconded and carried.

5. PROGRESS REPORT ON USD SCHOOL OF MEDICINE. Dr. Hollerman presented this report for the Council's information. Following his update, Dr. Lang moved that the Council accept the report and express their appreciation to Dr. Hollerman for the report. The motion was seconded and carried.

6. RESOLUTION #4 ON COST CONTAINMENT REPORT. Dr. Taylor addressed the Council on his concerns regarding this resolution.

- | Pros | Cons |
|--|--|
| 1. Passed by Seventh District Soc. | 1. Passage would direct AMA Delegate to vote against the report at the AMA meeting in St. Louis. |
| 2. Numerous points are not acceptable. | |

Dr. Taylor encouraged the Council members to reject this resolution so that he as AMA Delegate would not be directed to vote against the report at the upcoming annual meeting in St. Louis.

7. EMERGENCY MEDICAL SERVICE TRANSFER AND TREATMENT PROCEDURE GRANT. Dr. Saylor reported that the application for this grant was rejected. Dr. Chloupek stated that he has not received the official letter of rejection as yet.

8. SDAFP SPEAKERS' BUREAU. The Council considered a letter from Dr. Ray Nemer requesting permission to contact the Medical Association membership and request physicians to participate in a speakers' bureau.

- | Pros | Cons |
|---|------|
| 1. Bureau will be administered and records kept by the SDAFP. | |
| 2. Need for physicians who | |

can address economic topics in SD.

Dr. Gerber moved that the Council allow the South Dakota Academy of Family Physicians to solicit State Medical Association members for the speakers' bureau. The motion was seconded and carried.

9. HONORARY LIFE MEMBERSHIP FOR F. R. WILLIAMS, M.D. Dr. Miliea moved that the State Medical Association extend honorary life membership to Dr. F. R. Williams. The motion was seconded and carried.

10. SECOND SURGICAL OPINIONS. The Council reconsidered the matter of second surgical opinions as discussed by the Foundation Board.

- | Pros | Cons |
|---|---|
| 1. Consumer and government pressure to provide second opinions. | 1. No data to indicate second opinion validity. |

Following discussion, Dr. Leigh moved that the Council request the Foundation Board to prepare a white paper pointing out deficiencies in a second surgical opinion program for South Dakota, and if it appears imminent such a program is to be developed, the Foundation Board will draft a proposal for the Council's consideration and review. The motion was seconded and carried.

Mr. Johnson read a telegram received from the AMA indicating the AMA filed suit against HEW secretary to restrain HEW from disclosing the names of physicians and amounts of payments they received from Medicare.

Mr. Johnson reported on a letter received from the Louisiana Medical Society calling attention to a Madison Square Garden rally scheduled for August 6 to launch an all out drive for national health insurance.

11. NOMINATIONS TO THE SODAPAC BOARD. The SoDaPAC Board proposed Dr. Michael Rost and Dr. Durward Lang for membership on the Board. Dr. Bell moved that the Council appoint Dr. Rost and Dr. Lang to the SoDaPAC Board. The motion was seconded and carried.

The Council briefly discussed the continuing medical education requirements for membership. Mr. Johnson stated that a large number of physicians have not submitted their CME hours to the state office to date.

The meeting adjourned at 9:30 p.m.

MINUTES OF THE EXECUTIVE COMMISSION MEETING

9:00 P.M.
June 8, 1978

Ramada Inn
Sioux Falls, SD

The meeting was called to order at 9 p.m. by James Ryan, M.D., chairman of the Commission. Present for roll call were Drs. Ryan, Harris, Reaney, Leigh, Lushbough and Odland.

The Executive Commission considered the request from Flandreau for approval of their application to the National Health Service Corps for a physician to locate in that community. The request has been approved by the Brookings-Madison District Medical Society. Dr. Lushbough moved that the SDSMA approve the application and notify the appropriate individual in Flandreau of this action. The motion was seconded and carried.

Mr. Johnson reviewed several suggestions for projects which would provide additional income to the Association without raising dues. The Association could investigate the following projects:

- group travel
- auto leasing program
- cost accounting for all services provided by headquarters office.
- insurance programs
- Associate membership program
- printing for Association members

The Executive Committee directed that further information be developed for the group travel proposal and auto leasing program. The cost accounting procedure should be

implemented at once. The remaining three proposals were tabled at the present time.

The meeting adjourned at 9:45 p.m.

SECOND COUNCIL MEETING MINUTES

11:30 a.m.

Sunday, June 10, 1978

**Ramada Inn
Sioux Falls, South Dakota**

The meeting was called to order by Bruce Lushbough, M.D., Chairman. Those present for roll call were Doctors Russell Harris, James Ryan, Duane Reaney, Winston Odland, Joseph Hamm, W. R. Taylor, G. E. Tracy, Bruce Lushbough, Durward Lang, B. C. Gerber, G. Robert Bartron, R. C. Jahraus, David Buchanan, P. K. Aspaas, John F. Barlow, W. O. Rossing, Frank Messner, A. J. Barrett, Roger Millea, R. L. Stiehl, R. R. Lawrence, Eldon Bell, Commission Chairmen, James Larson, M.D. and Howard Saylor, M.D. and Student Representative, Dan Heineman.

Dr. Barlow moved to dispense with the reading of the minutes of the previous meeting inasmuch as they will be published. The motion was seconded and carried.

Dr. Lushbough introduced the new officers and councilors; Dr. Odland, vice president; Dr. Lang, speaker of the house; and Dr. James Wunder, councilor from District 11. **ELECTION OF CHAIRMAN OF THE COUNCIL.** Dr. Odland nominated Dr. Lushbough as Chairman of the Council. The nomination was seconded. **Dr. Millea moved that nominations cease and a unanimous ballot be cast for Dr. Lushbough as Chairman of the Council. The motion was seconded and carried.**

1. SCHEDULE FOR COUNCIL MEETINGS FOR COMING YEAR. The coming year Council meetings are scheduled for Friday and Saturday, October 13, 14; Saturday, January 6; and Friday and Saturday, April 27, 28. The Council accepted this for information.

2. COUNCILOR FROM SEVENTH DISTRICT. The Council instructed the Seventh District Medical Society to submit recommendations for Councilor to be elected at the fall Council meeting to replace Dr. Durward Lang.

3. REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF THE COMMISSION ON MEDICAL SERVICE AND THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS. Dr. Bartron noted the Reference Committee recommended that any future restructuring of the State Health Department should include a physician as the Secretary of the Department of Health. **Following discussion Dr. Bartron moved that the Council on behalf of the South Dakota State Medical Association recommend to the Governor and candidates for Governor that the position of Secretary of the State Department of Health be a physician. The motion was seconded and carried.**

4. ANNUAL MEETING ARRANGEMENTS AND FORMAT. A discussion was held concerning possible changes which could be made in the annual meeting arrangements and format which would encourage attendance by South Dakota physicians. **Dr. Barrett moved that the matter of annual meeting arrangements and the possible reorganization and restructuring of the annual meeting be referred to the Commission on Scientific Medicine for review and discussion. The motion was seconded and carried.**

The meeting adjourned at 11:45 a.m.

MINUTES OF THE FIRST HOUSE OF DELEGATES MEETING

8:45 A.M.

Friday, June 9, 1978

**Ramada Inn
Sioux Falls, SD**

The meeting was called to order at 8:45 a.m. by Winston Odland, M.D., Speaker of the House. Mr. Robert Johnson, Executive Secretary, called the roll. The following officers,

councilors, delegates, and alternate delegates were present: Drs. James Ryan, Russell Harris, Duane Reaney, Winston Odland, William R. Taylor, Gerald Tracy, Fred Leigh, Bernard C. Gerber, G. Robert Bartron, Bruce Lushbough, R. C. Jahraus, David Buchanan, Richard Gere, Paul Aspaas, Durward Lang, William Rossing, Frank Messner, Gordon Held, A. J. Barrett, Roger Millea, Robert L. Stiehl, Ronald R. Lawrence, John Christopher, George McIntosh, James Larson, Bernie Hanson, James Rud, A. A. Lampert, Jr., Werner Klar, James DeGeest, Emil Hofer, C. J. Monson, Walter Baas, Bill Church, L. J. Hyland, Guy Tam, R. E. Gunnarson, L. W. Finney, D. L. Johnson, D. G. Ortmeier, R. J. Foley, Morris Radack, Carroll Isburg, H. O. Haugan, R. D. Bloemendaal, Stephen Haas, D. J. Hafner, A. J. Javurek, M. George Thompson, Leonard Linde, and E. A. Johnson. Also present was Jean Gerber, Student Delegate.

Dr. Ryan spoke briefly to the members of the House of Delegates on matters of interest and concern to the State Medical Association.

Dr. Lushbough moved to dispense with the reading of the minutes of the previous meeting inasmuch as they have been published in the South Dakota Journal of Medicine. The motion was seconded and carried.

Dr. Odland appointed G. Robert Bartron, M.D. to act as parliamentarian for the House of Delegates.

Dr. Odland announced the appointments to the Nominating Committee to be as follows:

District 1—John Christopher, M.D.

District 2—Bernie H. P. Hanson, M.D.

District 3—Werner Klar, M.D.

District 4—M. R. Cosand, M.D.

District 5—David Buchanan, M.D.

District 6—R. G. Gere, M.D.

District 7—William Rossing, M.D.

District 8—Gordon Held, M.D.

District 9—A. J. Barrett, M.D., Chairman

District 10—Robert Stiehl, M.D.

District 11—L. M. Linde, M.D.

District 12—Eldon Bell, M.D.

Dr. Odland then announced his appointments to the four reference committees.

Reference Committee on Credentials, Resolutions and Memorials, Reports of Officers and Councilors

G. E. Tracy, M.D., Chairman

Bill Church, M.D.

J. H. DeGeest, M.D.

Reference Committee on Reports of the Commissions on Medical Service, and Legislation and Governmental Relations

G. Robert Bartron, M.D., Chairman

Roger Millea, M.D.

R. E. Gunnarson, M.D.

Reference Committee on Reports of the Commissions on Scientific Medicine, Internal Affairs, Communications and Liaison, and Professional Liability

John F. Barlow, M.D., Chairman

A. A. Lampert, Jr., M.D.

L. W. Finney, M.D.

Reference Committee on Reports of Special Committees and Miscellaneous Business

R. D. Bloemendaal, M.D., Chairman

Bernie Hanson, M.D.

Walter Baas, M.D.

Dr. A. A. Lampert, Jr., moved to dispense with the reading of the reports of the President, President-Elect, Vice-President, Secretary-Treasurer, Delegate and Alternate Delegate to the AMA, Executive Secretary, Speaker of the House, Councilor at Large, Chairman of the Council and Councilors, inasmuch as they have been published in the Handbook. The motion was seconded and carried.

Dr. Odland announced that two additional resolutions

have been received from the Yankton District Medical Society. Dr. Tracy moved that the House of Delegates accept the two additional resolutions and refer them to an appropriate Reference Committee for consideration. The motion was seconded and carried.

Mr. Johnson then read the resolutions which have been received for consideration by the House of Delegates.

RESOLUTION #1

TO: House of Delegates
South Dakota State Medical Association
FROM: Seventh District Medical Society
SUBJECT: AMA Commission on the Cost of Medical Care

REFERRED TO:

WHEREAS, the American Medical Association Board of Trustees appointed in 1976, a Commission to study health care costs and reasons for those costs, and

WHEREAS, the Commission presented a majority view conflictive with a continuation of free choice, private medical care under private voluntary auspices and in favor of government regulated and controlled health care, and

WHEREAS, the total thrust, as demonstrated clearly in the Summary Report of the Commission made public, December of 1977, is toward establishing the basis for the nationalization of health care under Federal auspices, now, therefore,
BE IT RESOLVED, that the 7th District Medical Association objects to the purposeful selection of members of the Commission who, in the majority, have demonstrated their preference for Federal intervention, regulation and control of private medical care, and to the obviously slanted and biased content of the Report, which replicates the plans by the Department of HEW to lay the basis for the nationalization of all medical and health care in the United States, and

BE IT FURTHER RESOLVED, that the 7th District Medical Association refuses endorsement of this Report and asks that the American Medical Association Board of Trustees withdraw any further support and cease to give credibility to the Report as a document that gives anything but a distorted, limited, collectivist view of the American Health Care System, and that this resolution be presented for passage at the next annual meeting of the South Dakota State Medical Association.

(Adopted as amended—See Minutes of Second House of Delegates Meeting.)

RESOLUTION #2

TO: House of Delegates
South Dakota State Medical Association
FROM: Seventh District Medical Society
SUBJECT: Cost of Medical Care

REFERRED TO:

WHEREAS, the rapidly increasing costs of medical care are a major concern to many people, and

WHEREAS, physicians have a determining influence on many medical care costs, now, therefore

BE IT RESOLVED, that the 7th District Medical Society urge the South Dakota State Medical Association to sponsor, either alone or with the co-sponsorship of the South Dakota Hospital Association, a seminar to discuss and analyze ways of helping to control the costs of medical care in South Dakota.

(Adopted—See Minutes of the Second House of Delegates Meeting.)

RESOLUTION #3

TO: House of Delegates
South Dakota State Medical Association
FROM: Seventh District Medical Society
SUBJECT: Standardized Curriculum Vitae Forms

REFERRED TO:

WHEREAS, recent years have evidenced an increasing demand for completion of forms regarding curriculum vitae, continuing education, etc., and

WHEREAS, a variety of forms are completed for hospital staff privileges, medical school staff, etc. all of which demand the same basic information, therefore

BE IT RESOLVED, that to minimize the repetition, a committee with hospital, medical school and medical society representation be appointed to design a basic official form that would be acceptable for all purposes.

(Not adopted—See Minutes of the Second House of Delegates Meeting.)

RESOLUTION #4

TO: House of Delegates
South Dakota State Medical Association
FROM: Yankton District Medical Society
SUBJECT: Support of Human Services Center

REFERRED TO:

BE IT RESOLVED, that the District VIII Medical Society hereby requests that the South Dakota State Medical Association support the needs of the Human Services Center (HSC) in any way feasible. In light of national events such as the Wyatt-Stickney Decision which mandated minimal levels of psychiatric instructions in Alabama, it is clear that the HSC will require increased funding, and additional physicians of high level of training, and other staff will be needed to supply the necessary services to the people of the state of South Dakota. The State Medical Association should therefore go on record as highly supportive of the efforts of the Board of Charities and Corrections to continually upgrade the psychiatric and other services rendered at the Human Services Center.

(Adopted—See Minutes of the Second House of Delegates Meeting.)

RESOLUTION #5

TO: House of Delegates
South Dakota State Medical Association
FROM: Yankton District Medical Society
SUBJECT: Support of Vocational Rehabilitation Referral Center—South Dakota Human Services Center

REFERRED TO:

LET IT BE RESOLVED, that the South Dakota State Medical Association should support the Legislative Research Council in any way possible, as they study and implement a program for a Vocational Rehabilitation Referral Center on the grounds of the Human Services Center (HSC). The need for improved patient care within the State, which would lessen costs of travel and direct patient care costs which are presently flowing out of our state, coupled with the need for appropriate utilization of the facilities at Yankton, add up to the fact that a rehabilitation program at the HSC is both warranted and, indeed, mandatory. The following "Rehab" programs

should be considered:

- a) Cardiac: presently funded through Vocational Rehabilitation and other sources, and operating as part of a community effort.
- b) Geriatrics: currently beginning under a Medicaid program.
- c) Speech and Hearing: potential for development through contract services with the University of South Dakota at Vermillion, as well as community health resources.
- d) Burn: although it is probable that acute care for burns would require intensive programs, burn rehabilitation in a sub-acute recovery stage could be performed at a facility in South Dakota.
- e) Stroke: a stroke rehabilitation unit, utilizing physical therapy, occupational therapy, and other ancillary personnel, should be strongly considered.
- f) Quadraplegic Rehabilitation: such programs are currently being funded through state money for patients to be seen out of state. It appears that an excellent program could and should be developed in South Dakota.

(Adopted as amended—See Minutes of Second House of Delegates Meeting.)

Dr. Odland then referred the reports contained in the Handbook to the appropriate Reference Committee. The resolutions were referred as follows: Resolutions #1, #2, and #3 were referred to the Reference Committee on Reports of Special Committees and Miscellaneous Business. Resolutions #4 and #5 were referred to the Reference Committee on Credentials, Resolutions, and Memorials, and Reports of Officers and Councilors.

The meeting adjourned at 9:15 a.m.

SECOND MEETING OF THE HOUSE OF DELEGATES

9:30 A.M.

Sunday, June 11, 1978

Ramada Inn

Sioux Falls, South Dakota

The meeting was called to order by Winston Odland, M.D., Speaker of the House.

Present for roll call were Doctors James Ryan, Russell Harris, Duane Reaney, Joseph Hamm, Winston Odland, W. R. Taylor, G. E. Tracy, Fred Leigh, B. C. Gerber, G. Robert Bartron, Bruce Lushbough, R. C. Jahraus, David Buchanan, Paul Aspaas, Durward Lang, William Rossing, John F. Barlow, Frank Messner, A. J. Barrett, Roger Millea, L. M. Linde, Eldon Bell, John Christopher, George McIntosh, James Larson, James Rud, A. A. Lampert, Jr., Werner Klar, M. R. Cosand, Emil Hofer, James DeGeest, Walter Baas, J. O. Mabee, Bill Church, L. J. Hyland, Guy Tam, R. E. Gunnarson, E. D. Kemp, L. W. Finney, Dennis Johnson, R. J. Foley, Morris Radack, Carroll Isburg, H. O. Haugan, A. J. Javurek, M. George Thompson, James Wunder, E. A. Johnson and students Dan Heineman, Norma Maxvold and Jean Gerber.

Dr. Buchanan moved to dispense with the reading of the minutes of the previous meeting inasmuch as they will be published. The motion was seconded by Dr. Larson and carried.

The report of the Nominating Committee was read by Dr. W. O. Rossing.

REPORT OF THE NOMINATING COMMITTEE

The Nominating Committee submits the following recommendations for the consideration of the House of Delegates:

COUNCILORS

Brookings-Madison District #3

Bruce Lushbough, M.D. (3 year term)

Huron District #5

David Buchanan, M.D. (3 year term)

Mitchell District #6

R. G. Gere, M.D. (3 year term)

Sioux Falls District #7

W. O. Rossing, M.D. (3 year term)

Black Hills District #9

Roger Millea, M.D. (3 year term)

Northwest District #11

James Wunder, M.D. (1 year term to complete the unexpired term of Dr. R. R. Lawrence who resigned)

ALTERNATE COUNCILORS

Brookings-Madison District #3

A. A. Lampert, Jr., M.D. (3 year term)

Huron District #5

G. Robert Bell, M.D. (3 year term)

Mitchell District #6

C. D. Monson, M.D. (3 year term)

Sioux Falls District #7

Michael Pekas, M.D. (3 year term)

OFFICERS

President Elect

Duane Reaney, M.D.

Vice President

Winston Odland, M.D.

Bruce Lushbough, M.D.

Speaker of the House

Durward Lang, M.D.

AMA Delegate

W. R. Taylor, M.D.

AMA Alternate Delegate

G. E. Tracy, M.D.

ANNUAL MEETING SITE

1979—Rapid City—June 7-10

1980—Aberdeen

1981—Sioux Falls

Respectfully submitted,

A. J. Barrett, M.D., Chairman

NOMINATING COMMITTEE

Dr. Harris moved to accept that section of the reference committee report pertaining to councilors and alternate councilors. The motion was seconded by Dr. Leigh and carried.

The Speaker called for nominations from the floor for the office of president elect. Dr. Tracy moved that nominations cease and a unanimous ballot be cast for Dr. Duane Reaney. The motion was seconded by Dr. Leigh and carried.

The Speaker called for nominations from the floor for the office of vice president. Dr. DeGeest moved that nominations cease and a secret ballot be cast. The motion was seconded by Dr. Millea and carried. Dr. Winston Odland was declared vice president. Dr. Lushbough moved that a unanimous ballot be cast for Dr. Odland as vice president. The motion was seconded and carried.

The Speaker called for nominations from the floor for the office of Speaker of the House. Dr. Taylor moved that nominations cease and a unanimous ballot be cast for Dr. Durward Lang. The motion was seconded by Dr. Harris and carried.

The Speaker called for nominations from the floor for the office of AMA Delegate. Dr. Rud moved that nominations cease and a unanimous ballot be cast for Dr. W. R. Taylor. The motion was seconded by Dr. Larson and carried.

The Speaker called for nominations from the floor for the

office of AMA Alternate Delegate. Dr. Harris moved that nominations cease and a unanimous ballot be cast for Dr. G. E. Tracy. The motion was seconded by Dr. Leigh and carried.

Dr. Aspaas moved to accept the sites for upcoming annual meetings as recommended by the committee. The motion was seconded by Dr. Tracy and carried.

Dr. Odland introduced Dr. Hubert A. Ritter, a member of the AMA Board of Trustees. Dr. Ritter reviewed programs which have been instituted by the AMA to promote the continued free enterprise practice of medicine and legal actions taken by the AMA on behalf of physicians in opposition to government intervention. He encouraged all physicians to become active members in the AMA as well as in their state and district societies.

The report of the Reference Committee on Credentials, Resolutions and Memorials and reports of Officers and Councilors was read by Dr. Tracy.

REPORT OF THE REFERENCE COMMITTEE ON CREDENTIALS, RESOLUTIONS AND MEMORIALS AND REPORTS OF OFFICERS AND COUNCILORS

The following delegates, alternates, officers and councilors of the South Dakota State Medical Association were present: Doctors James Ryan, Russell Harris, Duane Reaney, Winston Odland, Wm. Taylor, G. E. Tracy, Fred Leigh, B. C. Gerber, G. Robert Bartron, Bruce Lushbough, R. C. Jahraus, David Buchanan, Richard Gere, Paul Aspaas, Durward Lang, Wm. Rossing, Frank Messner, Gordon Held, A. J. Barrett, Roger Millea, Robert L. Stiehl, Ronald R. Lawrence, John Christopher, George McIntosh, James Larson, Bernie Hanson, James Rud, A. A. Lampert, Jr., Werner Klar, James DeGeest, Emil Hofer, C. J. Monson, Walter Baas, Bill Church, L. J. Hyland, Guy Tam, R. E. Gunnarson, L. W. Finney, D. L. Johnson, D. G. Ortmeier, R. J. Foley, Morris Radack, Carroll Isburg, H. O. Haugan, R. D. Bloemendaal, Stephen Haas, D. J. Hafner, A. J. Javurek, M. George Thompson, Leonard Linde, and E. A. Johnson and Student Delegate Jean Gerber.

A quorum was present for the meeting of the House of Delegates. Total registration for the convention is 311, including 178 physicians, 23 guests, 96 Auxiliary members and 9 sponsors.

The Committee submits the following resolution for the consideration of the House of Delegates:

WHEREAS, The Sioux Falls District Medical Society, the Sioux Falls District Auxiliary and the Yankton District Auxiliary members have been so thorough in making arrangements for the success of the combined meeting of our 97th anniversary,

BE IT RESOLVED, that the South Dakota State Medical Association give its voice in appreciation and thanks to the local physicians in the Sioux Falls District and the members of the Sioux Falls District Auxiliary and the Yankton District Auxiliary.

WHEREAS, The management of the Ramada Inn has been so cooperative in providing facilities for the success of the 97th annual meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Ramada Inn.

WHEREAS, The Sioux Falls Argus Leader, KELO and KSFY have been most cooperative in presenting the public news of the 97th annual meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Sioux Falls Argus Leader, KELO and KSFY.

WHEREAS, The Elks Club has been most cooperative in providing facilities for the Friday evening

buffet,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Elks Club.

BE IT RESOLVED, that \$50 be donated to the South Dakota Medical School Endowment Association in memory of the following physicians who died during the past year:

W. H. Saxton, M.D., Huron, SD
Klara Horthy, M.D., Kennebec, SD
L. J. Brookman, M.D., Vermillion, SD
Jack T. Cowan, M.D., Pierre, SD
Clark Johnson, M.D., Yankton, SD
John T. Murphy, M.D., Mitchell, SD
Benjamin Wells, M.D., Fort Meade, SD
Paul V. McCarthy, M.D., Aberdeen, SD
E. J. Batt, M.D., Sioux Falls, SD
L. E. Savage, M.D., Yankton, SD

The Committee reviewed the reports of the officers and councilors and recommends they be accepted as submitted.

The Committee would like to recognize the outstanding work and ability of our Executive Secretary, Robert Johnson, and especially commend him for his exemplary performance during the past legislative session.

The Committee reviewed Resolution #4, submitted by the 8th District Medical Society concerning the support of the Human Services Center. The Reference Committee recommends the adoption of this resolution.

The Committee reviewed Resolution #5, submitted by the 8th District Medical Society, in support of Vocational Rehabilitation Referral Center-South Dakota Human Services Center. The Committee recommends deleting the following words in line 11:

"is both warranted and, indeed, mandatory."

and amending lines 10 and 11 to read as follows:

"up to the fact that the feasibility of a rehabilitation program at the HSC should be studied."

With this change the Committee then recommends the adoption of Resolution #5. After the Legislative Research Council has made its recommendations, the Association should review and analyze their recommendations.

Respectfully submitted,

REFERENCE COMMITTEE ON CREDENTIALS,
RESOLUTIONS AND REPORTS OF OFFICERS
AND COUNCILORS

G. E. Tracy, M.D., Chairman

Bill Church, M.D.

J. H. DeGeest, MD.

Dr. Tracy moved to accept the report of the reference committee on credentials, resolutions and memorials. The motion was seconded by Dr. Larson and carried.

Dr. Tracy moved to accept the reports of the officers and councilors and the adoption of Resolution #4. The motion was seconded by Dr. Leigh and carried.

Dr. Taylor moved to accept the recommendation of the reference committee to amend Resolution #5 and to accept Resolution #5 as amended. The motion was seconded by Dr. Klar and carried.

The report of the Reference Committee on reports of the Commission on Medical Service and the Commission on Legislation and Governmental Relations was read by Dr. Bartron.

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF THE COMMISSION ON MEDICAL SERVICE AND THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

The Reference Committee carefully reviewed the report of the Commission on Legislation and Governmental Relations. With reference to the problems of physician extenders, including physician assistants and nurse practitioners, the Reference Committee recommends that the Commission

study and work towards achieving uniformity in the rules and regulations governing physician assistants and nurse practitioners. The Committee reviewed the legislative summary and recommends that the State Medical Association commend Bob Johnson for his excellent performance in the 1978 legislative session as well as in previous sessions. The Reference Committee recommends the acceptance of the report of the Commission on Legislation and Governmental Relations.

The Reference Committee reviewed the report of the Commission on Medical Service. The Committee noted that the proposal for a federal grant in the amount of \$500,000 for the West River Emergency Medical Service Transfer and Treatment Program has been rejected. Perhaps one of the contributing reasons for the rejection of the grant is the present structure of the State Health Department. The Reference Committee recommends that any future restructuring of the State Health Department should include a physician as the Secretary of the Department of Health. The Committee commends the Commission, under the chairmanship of Dr. H. L. Saylor, for their diligence and many hours of work and excellent report. The Reference Committee recommends the acceptance of the report of the Commission on Medical Service.

Respectfully submitted,

**REFERENCE COMMITTEE ON REPORTS OF THE
COMMISSION ON MEDICAL SERVICE AND THE
COMMISSION ON LEGISLATION AND GOVERN-
MENTAL RELATIONS**

G. Robert Bartron, M.D., Chairman

Roger Millea, M.D.

R. E. Gunnarson, M.D.

Dr. Church moved to accept the report of the reference committee on the report of the Commission on Legislation and Governmental Relations. The motion was seconded by Dr. Buchanan and carried.

Dr. Tracy moved to accept the report of the reference committee on the report of the Commission on Medical Service. The motion was seconded by Dr. Barlow and carried.

The report of the Reference Committee on Reports of the Commission on Internal Affairs, Communications and Liaison, the Commission on Scientific Medicine and the Commission on Professional Liability was read by Dr. Barlow.

**REPORT OF THE REFERENCE COMMITTEE ON
REPORTS OF THE COMMISSIONS ON SCIENTIFIC
MEDICINE, INTERNAL AFFAIRS, COMMUNICA-
TIONS AND LIAISON AND PROFESSIONAL
LIABILITY**

The Reference Committee considered the report of the Commission on Scientific Medicine. The Reference Committee recommends the acceptance of the report of the Commission on Scientific Medicine.

The Reference Committee considered the report of the Commission on Internal Affairs, Communications and Liaison. The Reference Committee recommends to the House of Delegates that a mechanism be set up for the establishment of a mediation panel with the Hospital Association to discuss ongoing or potential problems and keep the society informed. The Reference Committee recommended that it might be helpful to define the composition of the Budget and Audit Committee. The Reference Committee recommends the acceptance of the report of the Commission on Internal Affairs, Communications and Liaison.

The Reference Committee considered the report of the Commission on Professional Liability. The Reference Committee recommends the acceptance of the report of the Commission on Professional Liability.

The Reference Committee considered the amendments to the Bylaws as published in the Delegates Handbook and recommends their adoption.

Respectfully submitted,

**REFERENCE COMMITTEE ON REPORTS OF THE
COMMISSIONS ON SCIENTIFIC MEDICINE,
INTERNAL AFFAIRS, COMMUNICATIONS AND
LIAISON AND PROFESSIONAL LIABILITY**

John F. Barlow, M.D., Chairman

A. A. Lampert, Jr., M.D.

L. W. Finney, M.D.

Dr. Cosand moved to accept the report of this reference committee in its entirety. The motion was seconded by Dr. Barrett and carried.

The report of the Reference Committee on Reports of Special Committees and Miscellaneous Business was read by Dr. Baas.

**REPORT OF THE REFERENCE COMMITTEE ON
REPORTS OF SPECIAL COMMITTEES AND
MISCELLANEOUS BUSINESS**

The Reference Committee reviewed the report of the Committee for Continuing Medical Education. The Reference Committee recommends adoption of this report.

The Reference Committee reviewed the report of the Grievance Committee. The Reference Committee recommends the adoption of this report.

The Reference Committee reviewed the report of the Committee on Long Range Planning. The Reference Committee recommends the adoption of this report.

The Reference Committee reviewed the report of the South Dakota Political Action Committee. The Reference Committee recommends adoption of this report.

The Reference Committee reviewed the report of the Endowment Association. The Reference Committee recommends the adoption of this report.

The Reference Committee reviewed Resolution #2, submitted by the Seventh District Medical Society, concerning the Cost of Medical Care. The Reference Committee recommends adoption of this resolution with the provision that it be implemented through the already existing committee.

The Reference Committee reviewed Resolution #3, submitted by the Seventh District Medical Society, concerning Standardized Curriculum Vitae Forms. The Reference Committee recommends that this resolution not be adopted.

The Reference Committee considered Resolution #1 concerning the National Commission on the Cost of Medical Care Summary Report. The Reference Committee recommends non-acceptance of Resolution #1. The Reference Committee sympathizes with the intent of the Resolution because we also find the Summary Report non-acceptable in its present form. We feel that each of the 48 items contained in the National Commission on the Cost of Medical Care Summary Report should be considered individually, on its own merits, by our delegation. We would encourage our delegation to continue to support the free enterprise system in the practice of Medicine.

Respectfully submitted,

**REFERENCE COMMITTEE ON REPORTS OF
SPECIAL COMMITTEES AND MISCELLANEOUS
BUSINESS**

R. D. Bloemendaal, M.D., Chairman

Walter Baas, M.D.

Bernie Hanson, M.D.

Dr. Larson moved to accept the report of the reference committee on the Continuing Medical Education Committee, the Grievance Committee, the Long Range Planning Committee, the South Dakota Political Action Committee and the Endowment Association. The motion was seconded by Dr. Gunnarson and carried.

Dr. Tracy moved to accept the recommendation of the Reference Committee concerning Resolution #2. The motion was seconded by Dr. Leigh and carried.

Following a brief discussion Dr. DeGeest moved to ac-

cept the recommendation of the Reference Committee to reject Resolution #3. The motion was seconded by Dr. Gerber and carried.

Dr. Taylor moved to accept the recommendation of the Reference Committee to reject Resolution #1. The motion was seconded by Dr. Lushbough. Following discussion Dr. Church moved that a secret ballot be cast. The motion was seconded by Dr. Tracy and carried. The motion to accept the recommendation of the Reference Committee was defeated. Dr. Church moved to adopt Resolution #1 with the intention that this resolution, revised to pertain to the AMA, be introduced into the House of Delegates of the American Medical Association. The motion was seconded by Dr. Bell and carried.

Dr. Odland administered the Oath of Office to Dr. Russell Harris. Dr. Harris briefly addressed the House encouraging physician participation in Association activities and stating his intention to represent the medical profession in South Dakota to the best of his abilities.

Dr. Odland introduced the new officers and councilors to the House members. He announced that a brief Council meeting would be held immediately following adjournment.

Dr. Tracy moved to suspend the rules to consider the revision of Resolution #1 for introduction to the AMA house of Delegates. The motion was seconded and carried. Dr. Rossing moved the amended resolution as follows be introduced into the AMA House of Delegates. The motion was seconded by Dr. Johnson and carried.

RESOLUTION

TO: House of Delegates
American Medical Association
FROM: South Dakota State Medical Association
SUBJECT: AMA Commission on the Cost of Medical Care

WHEREAS, the American Medical Association Board of Trustees appointed in 1976, a Commission to study health care costs and reasons for those costs, and

WHEREAS, the Commission presented a majority view conflictive with a continuation of free choice, private medical care under private voluntary auspices and in favor of government regulated and controlled health care, and

WHEREAS, the total thrust, as demonstrated clearly in the Summary Report of the Commission made public, December of 1977, is toward establishing the basis for the nationalization of health care under Federal auspices, now, therefore,

BE IT RESOLVED, that the South Dakota State Medical Association objects to the purposeful selection of members of the Commission who, in the majority, have demonstrated their preference for Federal intervention, regulation and control of private medical care, and

BE IT FURTHER RESOLVED, that the South Dakota State Medical Association refuses endorsement of this Report and asks that the American Medical Association Board of Trustees withdraw any further support and cease to give credibility to the Report as a document that represents the views of the membership of the American Medical Association.

The meeting adjourned at 11:20 a.m.

KREISERS SURGICAL, INC.

21ST & MINNESOTA SIOUX FALLS, S. D. 57101 605-336-1155

AIRE-N-AQUA WHIRLPOOL BATHS

THREE WHIRLPOOL BATHS IN ONE

It's a TOTAL whirlpool bath



Aire-N-Aqua gives total turbulence to all areas of the bathtub or whirlpool tank. There are no low action areas such as found with "pump-type" whirlpool baths.

It's a HAND and ARM whirlpool bath



The Aire-N-Aqua turns the sink, Porta-tub or pan into an effective whirlpool bath for the hands and arms.

It's a FOOT BATH



In the nursing home, hospital or at home, the Aire-N-Aqua used with the Porta-tub, pail or similar container becomes a foot bath.

LABORATORY AIDS

Sponsored by the South Dakota Society of Pathologists

URINARY FREE CORTISOL

While the plasma cortisol by radioimmunoassay in morning and evening with the low dose overnight dexamethasone suppression is still as good a basic screening test for Cushing's syndrome as any test, the urinary free cortisol is very helpful in the diagnosis of this entity. A normal urine free cortisol is rare in Cushing's disease and there is very little overlap with the normal or reference values. An elevated urine free cortisol is rare in unstressed Cushingoid obesity, an entity commonly confused with Cushing's syndrome.

Cortisol, the major product excreted by the fasciculata of the adrenal, binds to an alpha I globulin transcortin. This compound is nearly saturated. When there is prolonged elevation of cortisol without diurnal variation as in Cushing's syndrome, free cortisol is eliminated as glomerular ultrafiltrate and there is a prolonged sustained increase in the free cortisol excreted in the urine. The test is not affected by drug induced alterations in hepatic metabolism of steroids. Free cortisol is also not affected by patients on spironolactone or dexamethasone. Prednisone and prednisolone do interfere with the assay.

Usually a 10-50 ml. aliquot of the 24 hour urine collection is requested. No preservative is necessary but the specimen must be frozen. Published normal values are 20-120 mcg/24 hrs.

John F. Barlow, M.D.
Pathologist

Letters To The Editor

There have been very few times in my life when I have been absolutely and completely surprised at a presentation ceremony. However, The Medical Association certainly did just that to me when they presented the Distinguished Service Award to me at their meeting last week. My sincerest thanks to all members of the Association and to you and your staff for this great honor.

Sincerely,
John Emmett Olson
Rapid City, SD

Tablets

Percodan® 

DESCRIPTION Each yellow, scored tablet contains 4.50 mg. oxycodone HCl (WARNING: May be habit forming), 0.38 mg. oxycodone terephthalate (WARNING: May be habit forming), 224 mg. aspirin, 160 mg. phenacetin, and 32 mg. caffeine.

INDICATIONS For the relief of moderate to moderately severe pain.

CONTRAINDICATIONS Hypersensitivity to oxycodone, aspirin, phenacetin or caffeine.

WARNINGS Drug Dependence Oxycodone can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence and tolerance may develop upon repeated administration of PERCODAN®, and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral narcotic-containing medications. Like other narcotic-containing medications, PERCODAN® is subject to the Federal Controlled Substances Act.

Usage in ambulatory patients Oxycodone may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using PERCODAN® should be cautioned accordingly.

Interaction with other central nervous system depressants Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics or other CNS depressants (including alcohol) concomitantly with PERCODAN® may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

Usage in pregnancy Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, PERCODAN® should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

Usage in children PERCODAN® should not be administered to children.

Salicylates should be used with caution in the presence of peptic ulcer or coagulation abnormalities.

PRECAUTIONS Head injury and increased intracranial pressure The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute abdominal conditions The administration of PERCODAN® or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

Special risk patients PERCODAN® should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

Phenacetin has been reported to damage the kidneys when taken in excessive amounts for a long time.

ADVERSE REACTIONS The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients, and some of these adverse reactions may be alleviated if the patient lies down.

Other adverse reactions include euphoria, dysphoria, constipation and pruritus.

DOSAGE AND ADMINISTRATION Dosage should be adjusted according to the severity of the pain and the response of the patient. The usual adult dose is one tablet every 6 hours as needed for pain.

DRUG INTERACTIONS The CNS depressant effects of PERCODAN® may be additive with that of other CNS depressants. See WARNINGS.

DEA Order Form Required.

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Subsidiary of the DuPont Company



November 1977

EDO-149P

SOUTH DAKOTA

CONSIDERATIONS FOR ORAL NARCOTIC ANALGESIC USE:

1. Determine need

What is causing pain? How is it perceived by you and your patient?

2. Prescribe a rapid-acting agent

Select a readily-absorbed oral agent that usually acts within 15 to 30 minutes.

3. Minimize potential risk

Prescribe in limited quantities for selected patients.

Schedule II classification means no refills, no telephone Rx. Patients with persistent pain must return for your evaluation of analgesic needs.

4. Provide adequate analgesia with minimum doses

Consider PERCODAN® because patients rarely ask for increased dosage. PERCODAN® relief can last up to six hours—until time for next tablet.

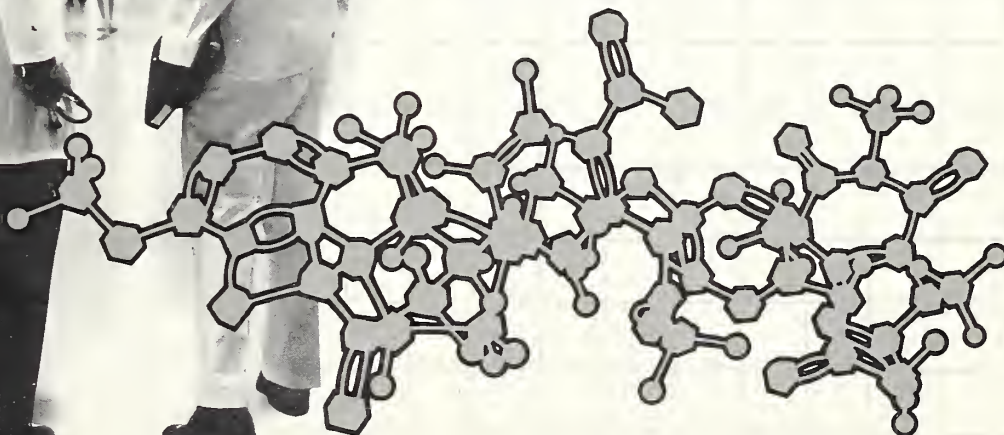
Effective relief of moderate to moderately severe pain

Tablets

PERCODAN®

each yellow, scored tablet contains: 4.50 mg oxycodone HCl (WARNING: may be habit forming), 0.38 mg oxycodone terephthalate (WARNING: may be habit forming), 224 mg aspirin, 160 mg phenacetin, 32 mg caffeine

II



SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105



FAMILY PRACTICE CLUB AT USDSM

The annual SDAFP sponsored spring Family Practice Club meeting for USDSM was held on Thursday evening, June 8, at the Izaak Walton League in Sioux Falls. Approximately 60 to 70 people were in attendance at this event. There were medical students from each of the four years, family practice residents from each year, and a good representation of South Dakota family physicians and their spouses.

The evening was an informal event with beer, pop, hot dogs, and potato chips being served. Volleyball and horse-shoes were participated in by many. There was no formal program. The turnout by the physicians was excellent, and the number of physicians outnumbered the students 2 to 1. Those who attended seemed to enjoy themselves, and in general the evening was a success.

Members of the Family Practice Club are: Earl Kemp, M.D., Steve Noll, M.D., Curtis Mark, M.D., Harold Fletcher, M.D., Jack Berry, M.D., Robert Seidel, M.D., Howard Hoody, M.D., Clay Van Balen, MS IV, and Nancy Phipps, MS III.

COMPUTERIZED MEDICAL EDUCATION RECORDS

SDAFP members are now in the second year of the AAFP sponsored CMER program, having been involved in the two year pilot program prior to the current program. Due to participation in the pilot program the state office now has a three year record of CME credits reported to the computer. This is the only record of SDAFP member CME efforts, which shows the importance of reporting hours on the appropriate cards supplied by AAFP and mailed to each member yearly. This computer printout can be used to authenticate your CME efforts for SDSMA membership and other useful needs and points out the need for updated and correct records. Only you can provide the necessary ingredients—properly completed forms upon completion of CME efforts!

SDAFP members will receive an updated copy of their corrected computer record in January of 1979, showing additional information that they have supplied upon receipt of their 1978 printout. This allows the member ample time to supply an update and correction of information provided on the previous year copy. The form received in 1979 will also show CME efforts submitted during 1978. Only you can "enter the computer."

When in doubt about CME reporting, how to get into the computer, when you need what hours for what purpose, and the like, contact the state office.

QUALIFICATIONS FOR A COMMITTEE CHAIRMAN

1. The ability to communicate. This is perhaps the single most important characteristic. Effective communication is a prime ingredient not only within the committee but with other committees, the governing body and related groups.
2. A record of active participation and interest in the association's activities and objectives. Consider his involvement in committee work—acceptance of assignments and follow-through.
3. A willingness to listen. He should be open-minded and encourage free expression of ideas, opinions and recommendations by committee members.
4. Ability to command attention and to inspire—a leader.
5. The ability to control without domination.
6. The knowledge of parliamentary procedure.
7. Initiative—a self-starter.
8. Prestige and respect within the industry or profession. His opinions must command the respect of other members and of those who will be guided by committee findings.
9. An understanding of the power relationship within the committee and his group's relationship with other committees.
10. Knowledge in the subject area in which the committee functions, particularly applicable to technical committees.
11. Ability to think and act in terms of the association's overall goals and objectives.
12. Ability to create the right atmosphere for productive committee work.
13. The availability to carry out the responsibilities involved. This includes time and, if necessary, resources.
14. A clear understanding of the position and role of the association management staff and need for close working relationship.

GEORGIA AAFP CONTINUING MEDICAL EDUCATION PROGRAMS

Primary Care Geriatrics (30 CME hours)

Four two-week sessions plus a final exam. Enrollment deadline is January 22, 1979; course begins April 16, 1979. Fee is \$180 for AAFP members, \$210 for non-members.

Primary Care of the Newborn (30 CME hours)

Four two-week sessions plus a final exam. Enrollment deadline is January 22, 1979; course begins April 16, 1979.

For further information contact: Miss Camille Day, Executive Director, GAFF Educational Foundation, 11 Corporate Square, Suite 205, Atlanta, GA 30329. (404) 321-7445.

REPORT OF THE PRESIDENT OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

I feel that the South Dakota State Medical Association will have to take a position and develop a long term plan and policy of the future role of the rural hospital in South Dakota. I feel this is important because the Health Service Act is in the process of developing a health care delivery system in the state of South Dakota. It has been feared that they would possibly take action to close certain hospitals in the state and/or restrict their levels of care. Secondly, the State Health Department in its review of hospitals is positioned so it can easily submit to the legislation new plans and new ideas. Members of the South Dakota Department of Health might sometime in the future submit a proposed law governing rural hospitals in rural South Dakota. Doctors should be reluctant to see the Medical Association be in a position of having to respond to someone else's ideas or plans, trying to either defeat them or modify them. The Medical Association should make a study of long term roles of the rural hospitals in South Dakota and how these hospitals should best be utilized. Some designs have been attempted and deserve mention. There have been plans for emergency medicine, evaluating accidents on highways and directing injured patients to specific hospitals. OB care and delivery of high risk pregnancies are advised to go to major centers for delivery. And of course, almost everyone comes up with the proposed plans for cutting costs.

It has been the trend in the past few years when one has a complicated patient to refer him to the larger centers for his care and treatment. Nobody quibbles with the larger centers' excellent quality of care and their better ability to handle these problems; however, I think there is going to have to be a plan and trend in the future to transfer these patients out of the larger hospitals to the smaller hospitals for certain problems such as chronic illnesses and long term post surgical care. A patient with a critical problem could have his basic disease diagnosed and treated in a large center and as soon as stabilized, some consideration could be given to transferring him back to a smaller hospital in the patient's own area for further care and convalescence. Roughly, the smaller hospital might be able to take care of the patient for \$100-\$150 daily compared to the large hospital which may have to charge \$200-\$250 per day because of its larger overhead. This is a highly emotional area and I have no preconceived plan. It has been discussed many times at various meetings that the South Dakota Medical Association has never investigated the possibilities or established a strong position and policy. This lack of assertion could stem from the possible repercussions in both the larger and smaller towns. I feel that the Medical Association should have a position established based on medical care delivery and merit as doctors have seen it, through their many years of practice in the state of South Dakota, both in the larger hospitals and in smaller hospitals throughout the state. I would feel more comfortable by a plan that has been developed in this way rather than one proposed by a non-medical federal or state government political forces.

Respectfully submitted,
James Ryan, M.D.
President

The Reference Committee reviewed the Report of the President and recommended its approval as submitted.

REPORT OF THE PRESIDENT-ELECT

During this past year, I have attended the Council meetings and Executive Commission meetings. I have also been involved, on your behalf, as one of your representatives to the Liaison Committee with the South Dakota State Health Department, which seems to be getting more involved as

time goes by. The relationship of our Society with the State Health Department is becoming, I feel, much more crucial than it has at any time in the past. The reason for this is that many Federal programs, those existing and those to come, are and will be administered through some agency of the South Dakota State Health Department. These programs involve all phases of medical care. Whether or not they exist we oftentimes have little to say, but their implementation is, I feel, so far always open to discussion and modification as it best fits the needs of South Dakota, and I think so far, we are getting a positive response from the officials of the State Health Department. It is my feeling that we will require strong representation from our membership in our future dealings with this segment of government.

I am also one of your representatives to the Physicians Subcommittee of the Health Manpower and Linkage Task Force Group, which as you know is a part of the HSA study which is developing a comprehensive assessment of what exists and speculation about what should exist in the delivery of health care to the citizens of South Dakota. This committee also has met several times and though the deliberations have been slow and as carefully thought out as possible, it appears that the documents should be forthcoming for approval by the members of the committee in the next few weeks.

President Ryan also appointed me to be a member of the ad hoc committee representing our Society in talks with the State Hospital Association. This liaison committee has had two meetings at this writing, discussing South Dakota's effort in the voluntary cost containment program for health care and the proposed rate review law which the Hospital Association wishes to reintroduce to the legislature at its next session. As you know, they introduced the same proposal this past legislative session and it was deferred for interim committee study by the state legislature and these deliberations will be going on this summer and our Association will be testifying before this committee.

I attended the interim AMA meeting in Chicago, in December of '77, as a part of your delegation and although I disagreed with some of the decisions made by the AMA House of Delegates it was a most meaningful experience.

In November of '77, I attended the North Central Medical Conference, which if you have not attended yourself in the past, you should. It is a socioeconomic conference. The speakers are of national renown. They bring messages of cheer and messages of doom and gloom, depending upon your particular point of view, but it is well worth the time spent and I would urge you all to attend if you can.

For those who have read this far, I would like to make one further statement regarding a meeting sponsored by the AMA that I attended the first part of March of '78, which was a "Negotiations Seminar". This seminar was valuable not only from the standpoint of activity within the State Association but from the standpoint of relationships with hospital officials and anyone else you might come in contact with on a quasi-adversary basis. It is a working seminar which presents the basic negotiating skills and shows you, at least on a beginner's level, how you might best present your views and influence the outcome of your discussions in a more favorable way. Those sessions are well worth your time and I would urge all of you who read this to take that course sometime in the future when the brochures are sent out again.

I look forward to the coming year with a certain amount of trepidation, but assure you that I will do my best to represent you in the fashion that you wish to be represented.

Respectfully submitted,
Russell H. Harris, M.D.
President-Elect

The Reference Committee reviewed the report of the President-Elect and recommended its approval as submitted.

REPORT OF THE VICE PRESIDENT

I attended the Fall and Winter Council meetings of the South Dakota State Medical Association as your Vice President.

Further activities included appearance before a special committee of HEW regarding the National Health Insurance hearing along with the President of the Council, Bruce Lushbough. We presented the feelings of the State Society against National Health Insurance and enumerated the many reasons why private practitioners in our state are opposed to federal intervention and federally controlled medical care.

I also attended a joint meeting with the South Dakota Hospital Association representatives to attain better rapport between the two Societies, particularly as relates to allowable insurance charges by the hospitals in the area of Medicare, Medicaid and Blue Cross. Further discussions with this group will be forthcoming and reported to the Society through the Council.

Respectfully submitted,
Duane Reaney, M.D.
Vice President

The Reference Committee reviewed the Report of the Vice President and recommended its approval as submitted.

REPORT OF THE SECRETARY-TREASURER

The Secretary-Treasurer attended the meetings of the Council and the Executive Commission of the South Dakota State Medical Association throughout the year.

On several occasions the Secretary-Treasurer and the Executive Secretary reviewed the financial status of the Association. Pertinent material from the discussions was presented to the Council at appropriate times.

Working with the Executive Secretary, the annual budget was prepared and submitted to the Executive Commission for subsequent review by the Budget Committee and the House of Delegates.

The Secretary-Treasurer serves on the Advisory Committee to the Health Professions Loan Fund of the Board of Regents. Jan Anderson of the administrative staff of the Association capably attended one of the meetings in my absence. The Secretary-Treasurer participated in other meetings and telephone conferences.

Respectfully submitted,
Joseph N. Hamm, M.D.
Secretary-Treasurer

The Reference Committee reviewed the Report of the Secretary-Treasurer and recommended its approval as submitted.

REPORT OF THE CHAIRMAN OF THE COUNCIL

The Council of the State Medical Association has met quarterly during the past year, having had meetings in June following the annual meeting and then in October, January and April.

The complete minutes of these meetings have been recorded and made available in the South Dakota Journal of Medicine.

Council meetings have been well attended and I have been grateful for the dedication and the long hours of work of each of the councilors.

The workload of the Council increases each year and I feel that the Council has well represented the membership during the deliberations on Medical Association matters during the past year.

Respectfully submitted,
Bruce C. Lushbough, M.D.
Chairman of the Council

The Reference Committee reviewed the Report of the Chairman of the Council and recommended its approval as submitted.

REPORT OF THE AMA DELEGATE

Your delegation to the annual meeting of the AMA in San Francisco in June, 1977, and to the interim meeting in Chicago in December, 1977, included Alternate Delegate, Gerald Tracy, M.D., President of the State Medical Association, James Ryan, M.D., or President-Elect, Russell Harris, M.D., Robert D. Johnson, Executive Secretary, and Delegate, W. R. Taylor, M.D.

Reports have been sent to the entire membership of the State Medical Association following the above meetings.

The delegation also attended a special one day meeting in Chicago on April 11, 1978, and the 1978 annual meeting is to be held in St. Louis in June, 1978.

Respectfully submitted,
W. R. Taylor, M.D.
AMA Delegate

The Reference Committee reviewed the Report of the AMA Delegate and recommended its approval as submitted.

REPORT OF THE AMA ALTERNATE DELEGATE

As Alternate Delegate, I have attended all the Council meetings except one. I have attended both the AMA meetings in Chicago and in San Francisco. I was deeply impressed again with the functioning of the American Medical Association and with the valuable input that comes from even one vote from South Dakota. Once more there were at least two occasions where the voting was decided by one vote, so that one vote does continue to carry import.

Dr. Bill Taylor, the Delegate, was kind and generous in allowing me to sit in on several of the sessions and so to further continue my education in the functioning of the American Medical Association.

Respectfully submitted,
Gerald E. Tracy, M.D.
AMA Alternate Delegate

The Reference Committee reviewed the Report of the AMA Alternate Delegate and recommended its approval as submitted.

REPORT OF THE SPEAKER OF THE HOUSE

The Speaker of the House of Delegates presided at the annual meetings of the House of Delegates and attended all the council meetings and most of the executive committee meetings during the past year. As an officer of the Medical Association, I observed the work of the Medical Association and found that in almost all instances to be unified and dedicated to the propositions for better health care. I have seen the actions of the council answer in the affirmative in the development of a long range comprehensive plan for health care in South Dakota. I believe the intent of this was not to start another round of planning or to outplan the planners but simply to state the matter of policy affecting health care delivery upon which we are mutually agreed. It is interesting to note that people who are engaged in actually doing things in medicine are not as dedicated to planning as those who are on the sidelines. What we do each day is the carrying out of health care delivery.

It is noteworthy to assess the accomplishments within the legislature during 1978. All bills opposed were successfully opposed and bills sponsored or advocated succeeded. This is a reflection of our close ties with the legislators of South Dakota as well as the people and it points out the necessity for employing finest judgment in working in the legislative area. The defeat of the hospital rate review board bill was a message to the Hospital Association and

to the legislature that the problem cost-containment in general must be addressed carefully and with broad medical input to insure any realistic change. We as an association are committed to work with the interim council or legislative research to determine the course of legislative action in cost-containment in medical care. I prefer the terminology of cost effectiveness since cost-containment has a connotation of cutting back or decreasing out-lays for care which may decrease the quantity and quality of care available.

During the year I have witnessed the action of the council and took part in the deliberations which negated several bureaucratic propositions coming from various sectors. It is imperative that we reject health care proposals which involve disruption of the free enterprise system in medicine and which are also of dubious value in the improvement of health care or which are not cost effective. I have urged the council and I urge the membership of the South Dakota Medical Association to not be afraid to stand on firm ground and reject proposals or regulations which are not in the interest of good patient care. We should be dedicated to selecting any part of health care planning from any sector which is plausible and a positive addition to our system of health care delivery. This is within the scope of our activity as described in the judicial code of the American Medical Association.

I believe the developments in OSHA should be a clear example of what can be done by persistent resistance to impractical programs.

From the point of view of several years of work and observation within the Medical Association, I have the distinct feeling that there has been considerable improvement in the distribution as well as the quality of medical care in South Dakota. I congratulate Jim Ryan, M.D. for an excellent year of leadership which has been in a truly positive course for medicine in South Dakota. The staff of the Medical Association's dedicated work speaks for itself in the areas of legislation, administration and services. I thank them profusely for such dedication.

I am looking forward to a productive annual meeting both from the standpoint of the scientific and the art of medicine as well as the business and politics of medicine.

Respectfully submitted,
W. B. Odland, M.D.

Speaker of the House

The Reference Committee reviewed the Report of the Speaker of the House and recommended its approval as submitted.

REPORT OF THE COUNCILOR AT LARGE

As immediate Past President and Councilor at Large, I was looking forward to a year of non travel, no responsibilities, and quiet reflection. However, I have found that this has not materialized.

As your representative on the Crippled Children's Advisory Board, I will have spent four full days in session at Pierre.

Also as your representative to the HSA—Acute Diagnostic Services task force—many, many hours were spent in completion of this portion. My hopes are that those of you involved in your respective task forces will attend and provide your most important input.

This year I have enjoyed attendance at the Council meetings, more in the role of observer, but with the hope that I did add some small constructive input into the meetings.

I was also in attendance at all of the Executive Commission meetings. These have been reported to the Council, and I would certainly presume from your Councilor to all of you.

The responsibilities of participation will not cease en-

tirely as I have been a member of the Grievance Committee this past year, and will continue to be for the next four years—the good Lord willing.

In the short time left before the termination of active participation in the inner workings of the South Dakota State Medical Association, I feel an inner pride and satisfaction to have been a part, small as it was, over the past 20 years in such a vibrant, progressive, constructive organization.

Respectfully submitted,
F. D. Leigh, M.D.

Councilor at Large

The Reference Committee reviewed the Report of the Councilor at Large and recommended its approval as submitted.

REPORT OF THE EXECUTIVE COMMISSION

The Executive Commission met a couple of times during the year to take care of the business of the Medical Association that could not wait for a regularly appointed meeting of the Commissions or Council. The first meeting was to handle the problems of the Hospital Rate Review Law. The Hospital Association had requested to meet with the Medical Association to discuss the Hospital Rate Review Law; it should be noted that this proposed legislation had already been submitted to the various commissions for study, to the Council for its final approval. The South Dakota Medical Association action was merely to state opposition to the Hospital Rate Review Law as it was proposed. The Executive Commission met with the Hospital Association and listened to their problems of why they felt that they needed this law to be passed. The Executive Commission's position was to reaffirm the opposition taken by the Commissions and the Council. We did express concern for the hospitals' problems and expressed a willingness to work out their problems. A committee has been appointed from the South Dakota State Medical Association and the South Dakota Hospital Association to work out proposed solutions to the Hospital Association's problems. It was emphasized to the Hospital Association that any proposed law should be in its final form before September 15, 1978, if they wanted the South Dakota State Medical Association's consideration and support. This should allow time for the appropriate commissions for study and recommendations so it can be presented to the Council well before January 1, for the South Dakota Medical Association's final position.

The second meeting of the Executive Commission met along with the Chairman of the Internal Affairs Commission to go over the proposed budget for 1978 and 1979. The budget was made and agreed upon by the Executive Commission and then submitted to the Commission on Internal Affairs for its consideration to either approve or disapprove or modify as they saw fit, and then later to be submitted to the Council for its final approval.

Respectfully submitted,
James E. Ryan, M.D.
Chairman

Executive Commission

The Reference Committee reviewed the Report of the Executive Commission and recommended its acceptance as submitted.

REPORT OF THE EXECUTIVE SECRETARY

During 1977-1978, Dr. Ryan, your President, and I have had the distinct privilege of visiting many of the District Medical Societies. I would like to take this opportunity to extend my sincere appreciation for the hospitality shown us during our visits. At the writing of this report, Dr. Ryan and I have visited nine of the twelve districts and

have made plans to visit the remaining three districts prior to the annual convention. I was gratified at the attendance in each of these district meetings and would encourage each district to continually strive to increase participation by physicians in the State Medical Association at a local level. The challenges which medicine has addressed during this past year are many and complex, and it is my opinion that through the process of district meetings, your Association can best receive input from the member physicians as to how medicine should meet these challenges in the future and provides an opportunity for our membership to be well informed on the multitude of issues affecting medicine.

Since the 1977 annual meeting, your Association has further increased its activities in the socio-economic area. As directed by the House of Delegates, we hired Mr. Jerry Maginn as our coordinator of socio-economic affairs and have assigned him specific responsibilities in conjunction with the National Health Planning Act (HSA) and other areas of socio-economic concern to medicine. The activities of the HSA will have a profound effect on the future practice of medicine, and I am grateful to the many physicians who have freely given of their time to participate in this planning process.

During 1977 and early 1978, the National Congress has considered many issues which, if enacted, would have a serious impact on the quality of medical care, and the relationships which presently exist between physicians and their patients. It goes without saying that it would be inappropriate to explain in detail each of the many measures affecting medicine on a national level in this report; however, some of them are familiar faces in a slightly different setting: National Health Insurance is now revised and submitted to the President by Senator Kennedy and labor; our continuing problems with the Federal Trade Commission; ever expanding power of the Secretary of HEW as it pertains to newly proposed drug laws and continuing emphasis on cost containment measures no matter how irresponsible.

Once again, the 1978 Legislative Session was both challenging and rewarding for the private practice of medicine. I will not reiterate the legislative program for the State Medical Association in 1978, inasmuch as it is contained in Dr. Jerde's report, but would like to take this opportunity to extend a special thanks to Dr. Jerde, the Chairman of the Commission on Legislation and Governmental Relations, as well as the entire Commission on Legislation. I would also like to take this opportunity to thank all of the member physicians and their wives for the support which they gave our legislative program this last session. It is through your continued efforts that those positions of vital concern and interest to the medical profession have prevailed. We dare not be lulled into a position of apathy for the forces of irresponsible change will continue to surface and may be vocalized by some of our traditional allies.

I would most certainly be remiss if I did not take this opportunity to extend a special thanks to all of the Commissions and their chairmen for the many hours they have contributed to the Association during this past year. It is through their thoughtful consideration of the many varied issues of interest to medicine that your Association is able to continue to represent the majority thinking of physicians in our state. I would also like to extend my sincere appreciation to all of the councilors and officers who have so effectively served the state Medical Association this last year.

To Dr. Ryan, your President, words are difficult to express the appreciation for the service, friendship, and the leadership which you have provided to the Association. Many times during the year when the problems seemed almost insurmountable, his closing remark "Have a Happy

Day" gave us the first rays of bright sunlight during a very difficult time.

Respectfully submitted,
Robert D. Johnson,
Executive Secretary

The Reference Committee reviewed the Report of the Executive Secretary. The Committee would like to recognize the outstanding work and ability of our Executive Secretary, Robert Johnson, and especially commend him for his exemplary performance during the past legislative session.

REPORT OF THE FIRST DISTRICT COUNCILOR

The Aberdeen District Medical Society met monthly from September 1977 through May 1978 except for January when no meeting is held. The meetings are held in conjunction with dinner for which the wives join us and then the auxiliary has a meeting separate from the District meeting.

In September, Dr. Erskin Caperton, a rheumatologist from the University of Minnesota, spoke on the general topic of arthritis. A memorial in honor of the late Dr. Paul McCarthy, a long-time member of the Aberdeen District Medical Society, was approved. Dr. Charles Pelton's membership was transferred from the Northwest District Medical Society to the Aberdeen District Medical Society. Dr. Pelton has established a practice in family medicine in Aberdeen. Membership applications were read for Dr. Susan M. Ostrowski of Eureka, Dr. Ismael H. Unite of Aberdeen, Dr. Alejandro Adajar of Bowdle, Dr. Thomas G. Bunker of Aberdeen. These applications were referred to the Board of Censors for review.

Dr. James Ryan, President of the South Dakota State Medical Association, Mr. Bob Johnson, Executive Secretary and Mr. Jerry Maginn of the South Dakota State Medical Association were present for the October meeting. Dr. Ryan and Mr. Johnson spoke at some length on problems confronting the medical profession in the state and suggested possible solutions to help alleviate these problems. The membership applications of Doctors Ostrowski, Unite, Adajar and Bunker were approved. These were then forwarded to the State Medical Association. Measures were initiated to attempt to get non-member physicians to join the Aberdeen District Society and the South Dakota State Medical Association.

Dr. Kenneth Koob, a neurologist from Sioux Falls, spoke on "Common Office Neurology." Some discussion was also held on the possibility of certifying the Aberdeen District Medical Society for continuing Category I Medical Education Programs. Fifty dollars was donated to SoDaPAC. It was recommended that the State Medical Association Office provide packets of information to the high schools in the area concerning their current debate topic on government comprehensive medical care.

Routine and special business was conducted at the December meeting. An additional \$50.00 was donated to SoDaPAC. Officers for 1978 were elected. The following is a slate of officers for 1978. President: Dr. Stanley Altman; Vice-President: Dr. John McFee; Secretary: Dr. Thomas Bunker. Delegates are Dr. James Hovland; Dr. John Christopher; Dr. George McIntosh. Alternate delegates are Dr. Juan Xavier; Dr. Karl Kosse; Dr. Myron Fahrenwald.

The scientific presentation at the February meeting was by Dr. Frederick L. Gobel of Minneapolis who presented a discussion of medical treatment of cardiac arrhythmia. Discussion was held concerning bills under consideration at the State Legislature and members were urged to contact their state senators and representative concerning several bills. A memorial was established for Dr. M. R. Gelber, a long-time member of the Aberdeen District Medical Society who recently died in Scottsdale, Arizona.

A brief business meeting was held in March. The speaker was unable to attend due to inclement weather conditions.

Additional meetings are planned for April and May with appropriate scientific presentations.

Respectfully submitted,
B. C. Gerber, M.D.
Councilor, First District

The Reference Committee reviewed the Report of the First District Councilor and recommended its acceptance as submitted.

REPORT OF THE SECOND DISTRICT COUNCILOR

Meeting dates and program:

April 5, 1977—Mr. Larry Holland, City Sanitarian, gave a program covering several hours of his activity.

May 3, 1977—No scientific program. Review of upcoming state meeting and submission of resolutions.

June, 1977—No meeting.

Dr. Heinrichs received the Distinguished Service Award presented by the State Medical Association at its annual meeting in June.

August and July, 1977—No meeting.

September 6, 1977—Combined meeting with Watertown District Medical Auxiliary. No scientific program.

October 4, 1977—Annual Presidential visit by Dr. James Ryan, President, South Dakota State Medical Association, Mr. Robert Johnson, Executive Secretary and Jerry Maginn, of the South Dakota State Medical Association.

November 1, 1977—Regular meeting, no scientific meeting.

December 6, 1977—Election of officers, delegates, and censors. New Officers are: President: Dr. Robert J. Meyer; Vice President: Dr. B. J. Desai; Secretary-Treasurer: Dr. Gerald Tracy. Censors are: Dr. John J. Stransky—3 years; Dr. Robert J. Meyer—2 years; Dr. Donald Fedt—1 year. Delegates are: Dr. B. H. P. Hanson and Dr. James C. Larson. Alternate Delegates are: Dr. James Rud and Dr. C. Rodney Stoltz.

January 3, 1978—No scientific program.

February 7, 1978—Dr. John Hoskins, urologist from Sioux Falls, gave a program on "Undescended Testicle".

March 8, 1978—Greg Bartron, States Attorney, presented a program on "The Battered Child Syndrome".

Respectfully submitted,
G. R. Bartron, M.D.
Councilor, Second District

The Reference Committee reviewed the Report of the Second District Councilor and recommended its acceptance as submitted.

REPORT OF THE THIRD DISTRICT COUNCILOR

The Third District Society meeting was held in Arlington on April 21, 1977. Dr. Humphreys of the University of South Dakota, Department of Medicine, was the speaker. Dr. Muggly and Dr. Scheller were selected as Delegates to the State Meeting.

A third District Society meeting was held on 6/23/77, at Brookings. Speaker for the evening was Dr. Edward Hogan of the Geography Department of South Dakota State University. The HSA and activities of the Association were discussed.

The Third District Society meeting was held on the 18th of August, 1977, in Madison, South Dakota. The program was given by Jeff Stingly from the Fourth Planning District concerning the South Dakota HSA.

A Third District Society meeting was held in October, 1977, in Brookings and Dr. James Ryan, President of the South Dakota State Medical Association, and Robert D. Johnson, Executive Secretary of the South Dakota State Medical Association, were guests and speakers and presented detailed discussion of current South Dakota Medical Association activities.

A Third District Society meeting was held in Flandreau,

South Dakota on December 1, 1977. The speaker for the evening was Director of the State PSRO. During the business portion of the meeting Dr. C. S. Roberts was nominated by the District for the State Distinguished Service Award.

Officers for the new year included: Dr. A. A. Lampert, Jr., President; Dr. Ron Tesch, Vice President; Dr. K. J. Kroack, Secretary-Treasurer. Credentials Committee included three censors: Dr. C. S. Roberts, Jr., Dr. Saul Friefeld and Dr. Joe Muggly. Delegates to the State meeting included: Dr. Art Lampert, Jr., Dr. Klar and Alternate Delegates are: Dr. Wait and Dr. Stensrud. It was decided that new by-laws should be developed for the Third District by the District officers.

The next meeting of the Third District Society was held in Madison on February 23, 1978. Dr. Warren Jones of Sioux Falls was the speaker. The new constitution and by-laws were presented by Dr. Art Lampert for acceptance as written and copies were forwarded to the South Dakota State Medical Association.

The final meeting of the year of the Third District Society was held on April 20th, 1978, at Brookings. Dr. Arthur Mollen of Phoenix, Arizona spoke on exercise and cardiac health and disease. Routine business matters were discussed at the business portion of the meeting.

Respectfully submitted,
Bruce C. Lushbough, M.D.
Councilor, Third District

The Reference Committee reviewed the Report of the Third District Councilor and recommended its acceptance as submitted.

REPORT OF THE FOURTH DISTRICT COUNCILOR

Since being elected Councilor in June of 1977, I have attended all of the Council meetings when the weather permitted.

The 4th District met on January 17, 1978, at which time Dr. James Ryan, State President, made his visitation. Officers for the coming year were elected which included: Dr. Barbara Spears as President, Dr. Hubert Werthmann as Vice-President, and Dr. Marion Cosand as Secretary-Treasurer. A discussion of legislative proposals were held with Bob Johnson reporting on Association legislative priorities.

Respectfully submitted,
R. C. Jahraus, M.D.
Councilor, Fourth District

The Reference Committee reviewed the Report of the Fourth District Councilor and recommended its acceptance as submitted.

REPORT OF THE FIFTH DISTRICT COUNCILOR

The following meetings were held in our district since my last report:

May 17, 1977: Meeting called to discuss resolutions pertaining to the June State meeting. Dr. Leigh, as State President, discussed topics of general interest from the State Association.

September 22, 1977: This meeting was held in the De Smet, S.D. country club and Dr. Ryan, State President from Mobridge, talked on topics of general interest to the district members present.

December 7, 1977: The district met again in Huron with a representative of the Picker Co. showing a graphic demonstration on application of Ultrasonics in medical practice.

March 23, 1978: Meeting held in Huron. Dr. Robert Chloupek of the State Department of Public Health discussed reportable diseases. The business meeting followed this presentation.

New members since my last report to the district:

Robert Holm, M.D., Internal Medicine
Ravi Kapur, M.D., Ophthalmology
Tom Kim, M.D., OB/GYN all of Huron, SD.

Respectfully submitted,
David J. Buchanan, M.D.
Councilor, Fifth District

The Reference Committee reviewed the Report of the Fifth District Councilor and recommended its acceptance as submitted.

REPORT OF THE SIXTH DISTRICT COUNCILOR

The Sixth District held three meetings throughout the year. At the election of officers, Dr. Charles Monson was elected President, Dr. Chris Moller was elected Secretary-Treasurer. Delegates were Charles Monson and Walter P. Baas. Richard G. Gere was appointed to the Council to replace H. R. Lewis, M.D. We, as a District, thank Dr. Lewis for his many years of able service on the Council.

Dr. Walter P. Baas, associated with the Mitchell Clinic, was welcomed into the District.

Respectfully submitted,
R. G. Gere, M.D.
Councilor, Sixth District

The Reference Committee reviewed the Report of the Sixth District Councilor and recommended its acceptance as submitted.

REPORT OF THE SEVENTH DISTRICT COUNCILOR

The Seventh District met monthly except for the summer months. Medical School staff and resident staff attend Seventh District meetings regularly.

A special effort has been made to acquaint the membership with government regulations and the actions of governmental agencies pertaining to medical care.

Respectfully submitted,
Durward M. Lang, M.D.
Paul K. Aspaas, M.D.
William O. Rossing, M.D.
John F. Barlow, M.D.
Councilors,
Seventh District

The Reference Committee reviewed the Report of the Seventh District Councilors and recommended its acceptance as submitted.

REPORT OF THE EIGHTH DISTRICT COUNCILOR

During the past year four meetings of the District Eight Medical Society were held.

May 19, 1977—A policy was adopted to respond to requests of endorsement of the National Health Service Corp.

The Nominating Committee recommended the present district officers continue for another year in their respective positions. The Committee nominated Frank Messner, M.D., for Councilor and Herb Saloum, M.D., Carroll Isburg, M.D., and Harold Fletcher, M.D., as Delegates to the annual meeting in 1977. R. I. Porter, M.D., Clark Johnson, M.D., and David Holzwarth, M.D. were nominated as Alternates. The above nominations were all accepted by the District.

Loren Petersen, M.D. was accepted for membership in the District Eight Medical Society. It was noted that with this application the District Eight Medical Society now qualified for a second Councilor. Dr. Gordon Held was nominated and approved to fill this position.

A motion was passed that a resolution to sent to the House of Delegates stating that patients reimbursed by Blue Cross and Blue Shield for psychiatric fees billed by psychiatrists should be reimbursed by Blue Cross and Blue Shield in the same fashion as other physician charges.

Dr. Richard Thornton and Dr. Clark Johnson were appointed to act as a liaison committee with the local press.

September 22, 1977—It was noted the House of Delegates adopted a requirement of 150 hours of continuing medical education every three years in order to maintain membership in the South Dakota State Medical Association.

Joyce Lynch, M.D. was accepted for membership in the District Eight Medical Society.

In response to the Lake Andes Medical Center, Inc. asking for endorsement of critical physician shortage, it was felt that due to the nearby presence of physicians and hospitals in the area, that the District Society could not, at this time, endorse the Lake Andes area as critically short of physicians.

It was noted that Dr. E. H. Heinrichs, Director of Student Health in Vermillion, has transferred his membership to the District Eight Medical Society from the Watertown District.

December 7, 1977—It was brought to the District Society's attention that nominations for distinguished service and community service awards were due and these should be brought to the attention of the officers in the near future.

The Hospital Rate Review Law and the Certificate of Need Law were discussed. It was noted that these were opposed by the State Medical Association. Frank Messner, M.D. presented a resume of the topics discussed at the Council meeting of December 7-8.

March 2, 1978—R. Foley, M.D., H. Fletcher, M.D., and M. Radack, M.D. were appointed as Delegates to the 1978 State Convention. Alternates approved were M. McVay, C. Isburg, M.D., and T. Johnson, M.D.

The following physicians were accepted as members of the District Eight Medical Society: Michael McVay, M.D., Vernon Hermesen, M.D., David Bean, M.D., Paul Finninger, M.D., Fe Cabuso, M.D., Gabriel Martino, M.D., P. C. Pascale, D.O., and L. P. Mills, D.O. It was noted that Dr. Ries and Dr. Shemonsky, from Vermillion, have sent letters of resignation from the District Eight Medical Society.

William Quick, M.D. discussed two resolutions he would like the District to bring before the House of Delegates. The first resolution would deal with the State Medical Assoc. supporting adequate funding of the State Human Services Center. The second resolution would call for the State Medical Association to support a study group to look into the possibility of vocational rehabilitation at the Human Services Center. The Medical Society agreed to support these resolutions.

Respectfully submitted,
Frank D. Messner, M.D.
Councilor, Eighth District

The Reference Committee reviewed the Report of the Eighth District Councilor and recommended its acceptance as submitted.

REPORT OF THE NINTH DISTRICT COUNCILOR

The recent adoption of the new by-laws of the Black Hills District Medical Society has been working well. This has allowed the bulk of the housekeeping business to be conducted by the Executive Committee with approval of the general membership.

Officers are: Charles Tesar, M.D., President
Don Kelley, M.D., Vice President
A. J. Barrett, M.D., Secretary-Treasurer
Charles Gwinn, M.D., 1st immediate Past Pres.
Reuben Bareis, M.D., 2nd immediate Past Pres.
Councilors are: W. E. Jones, M.D., A. J. Barrett, M.D., and Roger Millea, M.D.

Alternate Councilors are:

Thomas E. Mead, M.D., Bruce Allen, M.D., and N. R. Whitney, M.D.

Delegates are: H. O. Haugan, M.D., R. D. Bloemendaal, M.D., Bruce Allen, M.D., Stephen Haas, M.D., W. J. Mattson, M.D., W. J. Howard, M.D.

Alternate Delegates are:

D. J. Hafner, M.D., G. F. Wood, Jr., M.D., Charles Gwinn, M.D., F. P. Kwan, M.D., R. Kovarik, M.D., A. J. Javurek, M.D.

We have been privileged, in the past year, to have two State Officers in our ranks, R. H. Harris, M.D., President-Elect and Joe Hamm, M.D., Secretary-Treasurer.

Respectfully submitted,
A. J. Barrett, M.D.

Councilor, Ninth District

The Reference Committee reviewed the Report of the Ninth District Councilor and recommended its acceptance as submitted.

REPORT OF THE TENTH DISTRICT COUNCILOR

The Rosebud District Medical Society has held regular meetings during the past year. On March 23, our guest speaker was Dr. Vernon Hermesen, Yankton, who presented a program on "Diabetic Retinopathy and Laser Treatments".

Due to icy road conditions during the winter, we have been unable to meet with the President of the State Medical Association. However, a meeting with Dr. Ryan has been scheduled for May.

The Rosebud District Medical Society has added one new member, George Thompson, D.O. of Gregory. We anticipate that two more physicians will be moving into the District within the next two months.

Respectfully submitted,
R. L. Stiehl, M.D.

Councilor, Tenth District

The Reference Committee reviewed the Report of the Tenth District Councilor and recommended its acceptance as submitted.

REPORT OF THE ELEVENTH DISTRICT COUNCILOR

The Eleventh District has had district meetings since October of 1977, through April of 1978, which consisted of a one hour scientific session on various subjects pertinent to general practice. In addition to the scientific and business meetings, the District has carried out an effort to update the by-laws which will be adopted and approved at the April, 1978 meeting.

Respectfully submitted,
R. R. Lawrence, M.D.

Councilor, Eleventh District

The Reference Committee reviewed the Report of the Eleventh District Councilor and recommended its acceptance as submitted.

REPORT OF THE TWELFTH DISTRICT COUNCILOR

Since June, 1977, two meetings of the Whetstone Valley Medical Society have been convened. The first on October 19, 1977, with a Presidential visit in Sisseton. President Ryan spoke on a variety of topics and the Executive Secretary presented the legislative format. On March 1, 1978, Dr. Gail Benson spoke on the low back syndrome at the Lantern Inn in Milbank, South Dakota.

Respectfully submitted,
Eldon E. Bell, M.D.

Councilor, Twelfth District

The Reference Committee reviewed the Report of the Twelfth District Councilor and recommended its acceptance as submitted.

REPORT OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

I assumed chairmanship of this Commission in the fall, as Dr. Richard Gere accepted the position with the State Council. It was rather exciting and interesting, as we discussed various problems along with plans for the legislative session.

I do feel that the SDSMA staff did a very good job in Pierre, with most of the legislation being favorable. This is to be enumerated. It is, however, very important that we begin planning immediately, as there are several problem areas, some of which were briefly dealt with during the legislature and others that will be coming up this year.

We had meetings planned twice with the State Health Department to discuss mutual problems. Unfortunately, both times our public officials cancelled out and did not attend the meeting as they had indicated previously. We will attempt another meeting at some time in the future.

There is a large area concerning the Physician's Assistant, Physician Extender, as well as Nurse Practitioner, in terms of duties, responsibilities, privileges, etc., which should be granted to these people. Information is being obtained from other states and will be discussed and referred to the Council. The Rate Review Law, which caused considerable concern, has been placed in the hopper for study this summer. I think we can assume that we will be hearing more from this type of legislation. Additional study will have to be done regarding the Statute of Limitations as it pertains to physician corporations.

It is extremely important that all members of the South Dakota Medical Society become interested in both community as well as state activities. A variety of things are happening at all levels of government which do require our attention as well as input.

Respectfully submitted,
O. M. Jerde, M.D.
Chairman

Commission on Legislation and
Governmental Relations

The Reference Committee carefully reviewed the Report of the Commission on Legislation and Governmental Relations. With reference to the problems of physician extenders, including physician assistants and nurse practitioners, the Reference Committee recommends that the Commission study and work towards achieving uniformity in the rules and regulations governing physician assistants and nurse practitioners. The Committee reviewed the legislative summary and recommends that the State Medical Association commend Bob Johnson for his excellent performance in the 1978 legislative session as well as in previous sessions. The Reference Committee recommended the acceptance of the Report of the Commission on Legislation and Governmental Relations.

1978 LEGISLATIVE SUMMARY

Sponsored Bills

HB 1323—Revision of the Anti-Substitution Law—would allow a pharmacist to substitute a generically identical drug which is therapeutically equivalent if the physician specifically designates that substitution is permitted. *Final passage.*

SB 268—Revises the definition of a mental health professional so M.D.'s, not just psychiatrists, are included. *Final passage.*

Endorsed Bills

SB 1044—An act to change the procedure for handling the treatment of ophthalmia neonatorum—rescind the present law requiring the Health Department to pay for the silver nitrate used by a few hospitals in South Dakota. (Each hospital will purchase its own.) *Final passage.*

SB 106—An act to recognize primary care physician resi-

agency programs in South Dakota and appropriate \$250,000 in state support for South Dakota residency programs. (Family Practice, OB-GYN, Internal Medicine, Surgery.) *Final passage.*

SB 134—An act to provide advanced life support legislation to be administered by the South Dakota Board of Medical and Osteopathic Examiners. *Final passage.*

Senate Concurrent Resolution #4—to provide for an interim summer study of the problems of health care cost containment. *Final passage.*

Opposed Bills

HB 1083—Hospital Rate Review Act. *Killed in Senate Commerce Committee.* Amendment calls for a summer interim study.

HB 1125—An act to regulate the practice of optometry. This proposed bill will allow optometrists to use topical pharmaceutical drugs for use in the human eye. *Killed—two attempted "hoghouses" were also killed.*

HB 1131—Requires all occupational and professional licensing boards to deposit their funds in the state treasury. *Killed in Senate Commerce Committee.*

HB 1170—An act to require a certificate of need for Health Care Facilities and physicians' offices—amendments have removed physician offices and equipment from certificate of need requirements. *Final passage.*

HB 1181—An act to restrict admittance to hospitals, skilled nursing homes or intermediate care facilities on the basis of a signed statement of medical necessity. *Killed in House Health and Welfare Committee.*

HB 1282—Eliminates one M.D. from the Board of Medical and Osteopathic Examiners and adds one additional lay person and one employee of the Department of Health. *Killed in House.*

HB 1311—Legalizes the use of Laetrile. *Killed in Senate Health and Welfare Committee—one attempted "hoghouse" also killed.*

SB 115—An act to eliminate the State Board of Examiners in the Basic Sciences and its functions. *Killed in Senate Judiciary Committee.*

SB 281—Prohibits occupational and professional licensing boards from sharing office space or employees. *Killed in Senate Commerce Committee.*

SB 329—Combines the Department of Health and the Department of Social Services for purposes of administration. *Killed in Senate State Affairs Committee.*

REPORT OF THE COMMISSION ON MEDICAL SERVICE

The Commission met on Saturday, September 17, 1977, at the Ramada Inn, Sioux Falls, South Dakota. Present for roll call were Doctors Saylor, Broadhurst, Eckrich, Javurek, Petres, Monson, Hoskins and Jones. It was noted that Dr. Curtis Wait arrived but left immediately due to an emergency.

Dr. Jones moved that the Commission accept the minutes of the previous meeting as published. Motion seconded and carried.

A report of the Emergency Medical Services Program was given by Dr. Robert Chloupek, Mr. Tom Garaets and Mr. Jim Sawyer as an update for Commission information. Dr. Hoskins moved to accept the report on the Emergency Medical Service Program for information only. Motion was seconded and carried.

The Grant Proposal for Funds from Robert Wood Johnson Foundation limited entirely to Indian Reservations to improve maternal and child health care for the Indians and to develop educational programs for the Indians in terms of maternal and infant care was discussed and on motion by Dr. Jones the Commission recommended to the Council endorsement of the grant proposal.

A grant proposal from the University of South Dakota Medical School for a seminar series in contemporary health planning issues and techniques. (Areawide Health

Education Center) was fully discussed and Dr. Jones moved that the Commission recommend accepting the grant proposal if it is purely educational and not involved in the delivery of health care. Motion seconded and carried.

Rural Outreach Program proposed by Dr. John Gregg for a South Dakota Circuit Rider Program was discussed with all aspects of pro and con and since Dr. Gregg has rescinded his request for endorsement of the specific program, motion was made by Dr. Monson that the Commission recommend to the Council that this request be rejected, and that the request for endorsement of any such program be on an individual basis with specific information on the particular program. Motion was seconded and carried.

A presentation was made by Mr. Wally Johnson of Farmland Industries, Mr. Bob Calland of Physical Measurements, Mr. Robert Fielder of Multi-phasic Testing Services and Dr. Robert Thompson of Yankton, concerning the Mobile Health Screening Program sponsored by Farmland Industries. It was the general feeling of the Commission that the problems relating to difficulty of follow-up, inadequacy of the screening evaluation as compared to a complete examination, and the fact that the service provided in a mobile van are available to the people of South Dakota through individual physicians prevailed. Dr. Jones moved that the Commission recommend to the Council that the State Association not endorse this screening program but encourage the administrators of the program to emphasize to the people participating in the screening program that it is simply a screening program and not a complete examination. The motion was seconded and carried.

The question of inspection of hospital records for the purpose of relicensure by the Health Department in cases of non JCAH approved hospitals was brought to the attention of the Commission and after thorough discussion, Dr. Ryan directed the Executive Office to obtain a legal opinion from the Association's attorney as to how doctors can protect the patient's right to privacy in the matter of hospital records being inspected by the Health Department for the purpose of relicensure.

Rural Outreach Program—Miner-Hamlin Health Care Project was brought to the attention of the Commission. It was the consensus opinion of the Commission that this was not the appropriate method for delivery of quality medical care to the people of South Dakota.

The new Disease Reporting System as proposed by the Department of Health, Communicable Disease Control and Laboratory Service Division was brought to the Commission and on action Dr. Jones moved that the Commission recommend to the Council that the State Medical Association not oppose a Disease Reporting Format as presented. The motion was seconded and carried.

The recommendations on standards for intensive care nurseries in South Dakota (recommendations from the S. D. OB/GYN Society and the S. D. Chapter, American Academy of Pediatrics) was discussed. The Commission recommends to the Council that the State Association recommend the implementation of the recommendations from these groups and the improvement of pediatric care in the hospitals in a manner commensurate with the capabilities of the institution and the providers.

It was brought to the attention of the Commission that the JCAH on recent reviews specifically had requested delineation of the privileges for podiatrists to be included in the rules and regulations of the hospital staff by-laws. It was also brought to the attention of the Commission that payment for chiropractic services by Vocational Rehabilitation is mandated by a Federal directive on recommendation of the medical consultant in the area served.

A standardized certificate for birth and death as proposed by the Health Department was brought to the attention of

the Commission. The Commission recommended to the Council that the State Medical Association not object to the proposed birth and death certificate.

A request from the Health Department for support in the development of alcohol detoxification centers in non-hospital settings was discussed and the action taken by the Commission was recommendation to the Council that the Association recognize that there is an alcoholism problem in South Dakota, the physicians can understand the Department's concern and the Association offers its co-operation in providing medical consultation. This motion was seconded and carried.

A request from Dr. Stanley Graven for the Sudden Infant Death Syndrome Project grant was discussed. It was moved by Dr. Monson that the Commission recommend to the Council that the State Medical Association not support this grant request inasmuch as similar studies are being done in more populated communities in the United States and it is the Commission's feeling that the results of these studies should be received before any further action is taken in this regard. The motion was seconded and carried.

A letter from Region VIII Department of HEW regarding grant applications for Health Maintenance Organizations was presented. The HMO concept has been rejected by the Sioux Falls and Black Hills District Medical Societies and it was moved by Dr. Jones that the Commission recommend to the Council that this matter was brought to their attention and no action taken. This motion prevailed.

Information received on a rural health initiative grant which had been approved for a clinic in Herreid to be headed by a medex was brought to the attention of the Commission and it was moved by Dr. Jones that the Commission recommend to the Council that this matter be referred to the Board of Medical and Osteopathic Examiners for their review with special consideration to the prescribing practices of this physician assistant. The motion was seconded and carried.

The meeting adjourned at 5:00 p.m.

The Commission on Medical Services met at 9:30 a.m., February 25, 1978, at the Downtown Holiday Inn, Sioux Falls South Dakota. Those present for roll call were Doctors Saylor, Holzwarth, Rud, Hoskins, Warren Jones, and Tam.

It was moved and seconded and carried to dispense with the reading of the minutes of the previous meeting inasmuch as they have been published.

A grant application proposal from the Department of Health, Maternal and Child Health by Dr. Stanley Graven was presented requesting the assignment of National Health Service Corp physicians and other allied personnel to establish base clinics in rural areas and to provide these clinics' services to outreach areas in South Dakota. After considerable discussion, it was moved by Dr. Rud that the Commission recommend to the Council that although they recognize the intent of this proposal to provide medical care to rural areas of South Dakota, the State Medical Association cannot endorse this proposal because of the duplication of services already available, the questionable worth of the program as related to dollars expended, no assurance of the medical profession's acceptance, and the proposed teams were completely overloaded with allied health professionals. The motion was seconded and carried.

The Commission reviewed a request from Dr. Chloupek to reconsider the proposal on the SIDS program. Since this was the first time that this was adequately explained, the Commission's action on motion by Dr. Jones recommended to the Council that the State Medical Association endorse the proposed SIDS program with one amendment—that all autopsies on SIDS deaths be funded through this program rather than some. The motion was seconded and carried.

The protocols previously requested of the medical consultants for suggested transfer and treatment procedures for Emergency Medical Services in the critical care areas of trauma, burn, behavior, poison and cardiac patients were carefully reviewed by the Commission. It was felt by the Commission that since the ad hoc Committee had carefully reviewed the proposals and since the proposals did allow enough latitude so as not to be obstructive or restrictive and did establish base guidelines for allied medical personnel, that this was a feasible plan. Dr. Jones moved that the Commission recommend to the Council that the five protocols presented, including the amendments made by the ad hoc Committee for the critical trauma patient be accepted. The motion was seconded and carried.

The Emergency Medical Service Programs Grant Applications were next presented to the Commission for action. These were to implement advanced life support in the West Region of South Dakota, and to study the feasibility of advanced life support in the Southeast Region of the state. This proposed funding could be obtained for a maximum of six years before it became self-supporting and it was felt was necessary for overall program in South Dakota. It was moved by Dr. Holzwarth that the Commission recommend to the Council that the State Medical Association endorse the grant application proposed by the Emergency Medical Services Program. The motion was seconded and carried.

The Emergency Medical Services Draft Plan was submitted to the Commission for review and action but since it had not been received early enough for adequate review, the Commission directed the Executive Office to obtain this draft and to provide copies to the Commission members asking them to review it and return recommendations to the State Office.

The AMA resolution requesting State Medical Association to oppose mass screenings of school children in fragmented organ screening programs was next brought to the attention of the Commission. It was moved by Dr. Tam that the Commission recommend to the Council that the South Dakota State Medical Association endorse the AMA resolution opposing the mass screening of school children. The motion was seconded and carried.

The summary report on the National Commission on the Cost of Medical Care was discussed by the Commission and noted that the comprehensive report should be forthcoming from the AMA in the near future. Dr. Rud moved that the Commission accept this summary report as a point of interest and recommend to the Council that this report be disseminated to all members of the State Medical Association along with a letter encouraging all to read the report. The motion was seconded and carried.

The EPSDT-CHAP Programs were brought to the attention of the Commission with a summary provided by Dr. E. H. Heinrichs. It was felt that there was fragmentation of medical care and expensive and poorly planned program which did not accomplish its intended intent; and, since it is difficult to get physicians to comply with the present program, the action taken by the Commission—Dr. Rud moved that the Commission recommend to the Council that the State Medical Association not approve the proposed program in lieu of the present program. The motion was seconded and carried.

The Commission discussed with Mr. Bob Johnson the problem of receiving information and requests from the Health Department and other government agencies just prior to meeting dates making it difficult for Commission members to have adequate time for review and evaluation prior to the meeting. It was requested that the Executive Office correspond with the various departments and agencies notifying them well in advance of Commission meetings and stating that information to be considered at these meetings must be received at least fifteen days in advance. If the material is not received in advance, the

matter will be tabled or a recommendation made to oppose the request.

The meeting adjourned at 11:30 a.m.

Respectfully submitted,
H. L. Saylor, Jr., M.D.
Chairman, Commission on
Medical Service

The Reference Committee reviewed the report of the Commission on Medical Service. The Committee noted that the proposal for a federal grant in the amount of \$500,000 for the West River Emergency Medical Service Transfer and Treatment Program has been rejected. Perhaps one of the contributing reasons for the rejection of the grant is the present structure of the State Health Department. The Reference Committee recommends that any future restructuring of the State Health Department should include a physician as the Secretary of the Department of Health. The Committee commends the Commission, under the chairmanship of Dr. H. L. Saylor, for their diligence and many hours of work and excellent report. The Reference Committee recommended the acceptance of the report of the Commission on Medical Service.

REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE

The Commission on Scientific Medicine met twice during the past year. Both meetings were held in Sioux Falls.

At the September meeting, the Commission developed the scientific program for the 1978 annual meeting. A somewhat different time schedule has been arranged and it is hoped it will be more convenient for members attending the meeting.

The Commission developed a position paper on Laetrile for the South Dakota State Medical Association which was adopted by the Council and utilized in Pierre during the legislative session. The position paper was also provided to each member of the Association.

The Commission reviewed guidelines for a national immunization program submitted by the State Health Department. The Commission recommended that the Association endorse this program.

The Commission received a report on accreditation of hospitals in the state for Category I CME programs. Two hospitals have received this accreditation and two more have submitted applications which are being processed at this time. The South Dakota State Medical Association has received accreditation for the annual meeting for Category I CME hours.

The Commission has discussed coordinating scientific programs in South Dakota presented by the Medical Association, the School of Medicine, the AAFP and other specialty societies. No definitive action has been taken at this time.

Respectfully submitted,
James Larson, M.D.
Chairman
Commission on Scientific
Medicine

The Reference Committee considered the report of the Commission on Scientific Medicine. The Reference Committee recommended the acceptance of the report of the Commission on Scientific Medicine.

REPORT OF THE COMMISSION ON INTERNAL AFFAIRS, COMMUNICATION AND LIAISON

The Commission met twice during the past year, the first meeting on September 10, 1977, at the Holiday Inn Downtown, the second meeting held March 14, 1978, at the Howard-Johnson Motor Lodge, both meetings being held in Sioux Falls.

The Commission considered a request from students of the USD School of Medicine for money to purchase a film

about VD, and it was recommended by the Commission that the students contact the State Department of Health for funds.

The Commission recommended to the Council that they approve and adopt the revised prescription blank forms which would allow the physician to designate whether or not the prescriptions could be filled with a generic drug.

A request from the Great Plains Legal Foundation for financial support was considered, and it was recommended to the Council that the South Dakota State Medical Association not provide financial support to the organization, but that physicians should have the opportunity to support it as individuals.

The Commission considered Resolution #1 passed by the House of Delegates at the annual meeting, a resolution concerning arbitration of disputes between medical staffs and hospital boards in South Dakota. The Commission reported to the Council that it was the feeling of the Commission of Internal Affairs, Communications and Liaison that legal binding arbitration between the Medical Association and Hospital Associations as such was not feasible; however, regular meetings of a mediation panel to discuss issues and to air differences might be of value.

The Commission recommended that the State Medical Association not enter into an agreement with the Emergency Medical Services Department of the State Health Department to finance out-of-state travel on a contractual basis.

The Commission reviewed various plans outlined by other states to deal with the Impaired Physician and after considering these, recommended to the Council that the functions covered in these programs be assigned to the Grievance Committee and that the Grievance Committee's function would be to obtain facts and recommend rehabilitation measures; if the physician involved did not follow the recommendations, the Committee would have the authority to report the matter to an appropriate body for action.

A number of by-law changes were considered by the Commission, and it was recommended to the Council that these by-law changes be adopted.

The Commission recommended to the Council that the Medical Association contact the Office of Student Affairs, University of South Dakota Medical School, expressing our continued interest in student participation in our organization.

The Commission reviewed various aspects of the physician recruitment program and made recommendations to the Council regarding this program.

Recommendation was made to the Council also that the bylaws of the State Medical Association be changed so that references to Council or Councilors be changed to Board of Trustees or Trustees.

The past year, the following South Dakota physicians have died:

W. H. Saxton, M.D., Huron, SD
Klara Horthy, M.D., Kennebec, SD
L. J. Brookman, M.D., Vermillion, SD
Jack T. Cowan, M.D., Pierre, SD
Clark Johnson, M.D., Yankton, SD
John T. Murphy, M.D., Mitchell, SD
Benjamin Wells, M.D., Ft. Meade, SD
Paul V. McCarthy, M.D., Aberdeen, SD
E. J. Batt, M.D., Sioux Falls, SD

The Health Career Loan Fund reported the following activity during the past 12 months.

Balance in Savings Account	\$15,615.48
March 11, 1977	
Income	
Interest	\$ 1,112.40
Loan Payments	2,386.39
	<hr/>
	\$19,114.27
Balance in Savings Account	\$19,114.27
March 9, 1978	

During the year, the Commission has reviewed each financial report of the State Medical Association, the Journal Account and the Building Fund. The Budget and Audit Committee, consisting of the Executive Commission and the Chairman of this Commission approved the budget for the fiscal year 1978-79. The budget was submitted to the Council and approved for transmittal to the House of Delegates. A copy of the budget is attached as a part of this report.

Respectfully submitted,
Lawrence W. Finney, M.D.
Chairman,

The Reference Committee considered the Report of the Commission on Internal Affairs, Communications and Liaison. The Reference Committee recommends to the House of Delegates that a mechanism be set up for the establishment of a mediation panel with the Hospital Association to discuss ongoing or potential problems and keep the society informed. The Reference Committee recommended that it might be helpful to define the composition of the Budget and Audit Committee. The Reference Committee recommended the acceptance of the report of the Commission on Internal Affairs, Communications and Liaison.

PROPOSED BUDGET 1978-79 SOUTH DAKOTA STATE MEDICAL ASSOCIATION

GENERAL FUND INCOME

ITEM	BUDGETED 77-78	PROPOSED 78-79
State Dues	\$135,000.00	\$140,000.00
Annual Meeting	13,000.00	13,000.00
Refunds & Misc.	4,000.00	4,000.00
Car Reimb.	250.00	250.00
Cont. Med. Ed.	1,000.00	1,000.00
Adminis. Reimb.	5,000.00	7,200.00
	<u>\$158,250.00</u>	<u>\$165,450.00</u>

EXPENSES

ITEM	BUDGETED 77-78	PROPOSED 78-79
Salary, Exec. Sec.	\$ 18,500.00	\$ 21,500.00
Salary, Other	51,400.00	57,500.00
Social Security	2,700.00	4,900.00
Legal & Audit	4,500.00	5,500.00
Telephone	4,300.00	4,000.00
Office Supplies	7,500.00	5,800.00
Dues & Sub.	500.00	500.00
Phys. Travel	5,500.00	6,000.00
Annual Meeting	13,000.00	13,000.00
Public Relations	4,500.00	5,500.00
Journal Subsidy	3,500.00	5,000.00
Postage	8,500.00	6,500.00
Miscellaneous	100.00	100.00
Legislative Exp.	3,000.00	4,200.00
Car Expense	1,200.00	1,200.00
Staff Travel	10,500.00	8,500.00
Insurance	1,500.00	1,500.00
Retirement/Fringe Benefits	11,200.00	12,000.00
Taxes	300.00	200.00
Aux. Newsletter	800.00	800.00
Employment Tax	125.00	150.00
CME	800.00	800.00
Malpractice	—	—
Equipment	2,500.00	—
	<u>\$156,425.00</u>	<u>\$165,150.00</u>
Reserve	1,825.00	300.00
	<u>\$158,250.00</u>	<u>\$165,450.00</u>

BUILDING FUND INCOME

ITEM	BUDGETED 77-78	PROPOSED 78-79
Foundation Rent	\$ 9,000.00	\$ 10,800.00
Bd. of Exam. Rent	1,800.00	1,800.00
Interest Income	7,000.00	7,000.00
	<u>\$ 17,800.00</u>	<u>\$ 19,600.00</u>

EXPENSES

ITEM	BUDGETED 77-78	PROPOSED 78-79
Salaries, Staff	\$ 7,400.00	\$ 8,100.00
Utilities	2,000.00	2,300.00
Taxes & Ins.	3,800.00	4,000.00
Maint. & Supplies	2,500.00	3,000.00
Legal & Audit	1,000.00	1,200.00
	<u>\$ 16,700.00</u>	<u>\$ 18,600.00</u>
Reserve	1,100.00	1,000.00
	<u>\$ 17,800.00</u>	<u>\$ 19,600.00</u>

JOURNAL INCOME

ITEM	BUDGETED 77-78	PROPOSED 78-79
Advertising	\$ 14,000.00	\$ 16,000.00
Subscriptions	600.00	1,000.00
Refunds	720.00	720.00
Journal Subsidy	3,500.00	5,000.00
Miscellaneous	300.00	300.00
Contribution	—	600.00
	<u>\$ 19,120.00</u>	<u>\$ 23,620.00</u>

EXPENSES

ITEM	BUDGETED 77-78	PROPOSED 78-79
Salary, Editor	\$ 720.00	\$ 720.00
Salary, Staff	1,500.00	1,500.00
Legal & Audit	100.00	100.00
Social Security	100.00	100.00
Telephone	100.00	100.00
Postage	750.00	1,000.00
Office Sup. & Print	14,950.00	20,000.00
	<u>\$ 18,250.00</u>	<u>\$ 23,520.00</u>
Reserve	870.00	100.00
	<u>\$ 19,120.00</u>	<u>\$ 23,620.00</u>

PROPOSED BYLAW CHANGES

(()) additions
((())) deletions

ARTICLE VII Officers

Section 1. Designation and Terms

a: Designation—The officers of this Association shall be the President, President-Elect, Vice President, Speaker of the House of Delegates, Secretary-Treasurer, ((and)) one Councilor for every fifty (50) members or fraction thereof from each component society ((.)) (((and the Delegate(s) and Alternate(s) to the American Medical Association.))) The Council may employ an executive secretary who need not be a physician nor a member of the Association who may act in an ex-officio capacity at the direction of the Secretary-Treasurer.

Reason for proposed change: to conform with the Articles of Incorporation, Article VII, which does not consider the AMA Delegate and Alternate Delegate officers of the Association.

The Reference Committee reviewed this Bylaw revision and recommended its adoption.

ARTICLE VII Officers

Section 1. Designation and Terms

c: Terms of Officers—The House of Delegates at its regular meeting shall elect the following officers to serve the terms indicated: (1) President-Elect, one year; (2) Vice-president, one year; (3) Speaker of the House of Delegates, one year; (4) (((AMA Delegates(s) and Alternate Delegate(s), two years;))) One Council member for a three year term from one-third of the districts and where a district has four or more members, more than one may then stand for election in such a manner to provide for staggered election of equal numbers of council members from any one district. ((((6)))) (5) The Council shall elect a Secretary-Treasurer to assume office at the close of the last general session of the meeting to serve for three years. All of the officers shall serve until their successors are elected and installed, and each officer shall assume office at the close of the last general session of the annual meeting at which they were elected, and shall serve until the corresponding period of the annual meeting following their election, except in the case of the Councilors and the Secretary-Treasurer, and they of the Third annual meeting next following their election. (((The AMA Delegates(s) and Alternates(s) shall take office on the first of the calendar year following election for a period of two years.))) At the close of the last general session of the annual meeting next following his election, the President-Elect shall assume the office of President, and serve as such until the corresponding period of the following annual meeting, or until his successor assumes office at the next annual meeting. (((At the conclusion of the meeting at which the term of the Secretary-Treasurer is to expire, the Council shall elect a Secretary-Treasurer to assume office at the close of the last general session of the meeting and to serve until the corresponding period three annual meeting hence.)))

Reason for proposed change: According to the Articles of Incorporation, Article VII, the AMA delegate and alternate are not considered officers and therefore should be excluded from this section of officers; provision should be made for the election of the Chairman of the Council; and the last sentence is redundant.

The Reference Committee reviewed this Bylaw revision and recommended its adoption.

ARTICLE VII Officers

Section 1. Designation and Terms

d: Restrictions—No Officer or Councilor shall be permitted to serve simultaneously as a chairman of a Commission or Reference Committee of the South Dakota State Medical Association or to serve simultaneously as an Officer and Councilor or to serve in more than one Officer position ((.)) ((except there shall be no restriction as to who may serve as delegate or alternate delegate to the American Medical Association.)))

Reason for proposed change: Inasmuch as the AMA delegate and alternate delegate are not considered officers or councilors according to the Articles of Incorporation, Article VII, this exception need not be included in the restrictions.

The Reference Committee reviewed this Bylaw revision and recommended its adoption.

ARTICLE VII Officers

Section 2. Election of Officers

b: Time of Election—The report of the nominating committee and the election of officers ((and the election of the AMA Delegates(s) and Alternate Delegates(s))) shall be the first order of business of the House of Delegates at the second session of the regular meeting of such House.

Reason for proposed change: AMA delegate and alternate delegate are not considered officers according to Article VII of the Articles of Incorporation and therefore must be mentioned separately.

The Reference Committee reviewed this Bylaw revision and recommended its adoption.

ARTICLE VII Officers

Section 3. Failure to Fill Office

If before the expiration of the term for which he was elected, the President ((or President-Elect)) dies, resigns, is removed from office, or becomes disqualified the President-Elect ((or Vice-President)) shall succeed to the next higher office vacated. Vacancies created by the death, resignation or removal of other officers shall be filled by appointment by the Council for the unexpired portion of the term, or in the case of vacancies in the office of the Councilor or the Secretary-Treasurer, until the next annual meeting.

Reason for proposed change: if a vacancy occurs in the office of president elect, the Council shall appoint someone to fill that office until an election can be held at the time of the annual meeting rather than allowing the vice president to automatically succeed to the office of president elect because a recent bylaw change allows the president elect to automatically assume the presidency.

The Reference Committee reviewed this revision to the Bylaws and recommended its adoption.

ARTICLE VIII Council

Section 1. Composition

The Council shall consist of the Councilors, the President, the President-Elect, the Vice President, the immediate Past President, (Councilor-at-Large), the Speaker of the House of Delegates, the Secretary-Treasurer of the Association, and the Delegate(s) ((and Alternate Delegate(s))) to the American Medical Association. A majority of its members shall constitute a quorum. ((The Council shall elect a Chairman of the Council to assume office at the close of the last general session of the meeting to serve for one year.))

Reason for proposed change: include the AMA alternate delegate as a member of the Council.

The Reference Committee reviewed this revision of the Bylaws and recommended its adoption.

ARTICLE VIII Council

Section 2. Duties

g. Management of Funds

(1) Budget—The Council shall submit an annual budget providing for the necessary expenses of the Association, which shall be prepared ((by the Executive Secretary and the Secretary-Treasurer and shall be reviewed)) by the Committee on Auditing and Appropriations and presented for the Council's consideration (((at the first meeting of the Council at the annual meeting of each year.))) ((prior to the annual meeting.))

(2) Audit—The Council shall prescribe the methods of accounting and through a committee (((of

three))) of its members, to be known as the Committee on Auditing and Appropriations, shall audit all accounts of this Association.

(3) Expenditures—All resolutions of the House of Delegates providing for appropriations or expenditures shall be referred to the Council, and all of such which are approved by the Council shall be included in the annual budget. The Council may, by order, authorize any officer or committee to expend money not provided in the budget as adopted, or to spend any money in excess of the budget limitation.

(4) Salaries—The salaries of all employees of the Association shall be fixed by the Council.

Reason for proposed change: allow more latitude in appointment of a budget and audit committee and time to present the budget to the Council.

The Reference Committee reviewed this revision of the Bylaws and recommended its adoption.

ARTICLE X Commissions

Section 4.

d. Professional Liability Commission—The Commission on Professional Liability shall consist of ((one member from the Commission on Legislation and Governmental Relations; one member from the Commission on Credentials; one member from the Committee on Continuing Medical Education; one physician member from the Board of Directors of the South Dakota Foundation for Medical Care; one member from the Grievance Commission; one member from the Utilization and Review Committee; and three members at large.))) ((nine members.)) The Commission shall be appointed by the president; the original appointments shall consist of three appointments for a one year term; three appointments for a two year term; and three appointments for a three year term. Thereafter, all appointments shall be for three year terms. The Commission's duties shall be to study and work in a liaison capacity and make recommendations to the Council in matters pertaining to professional liability problems and insurance coverage in the state of South Dakota.

Reason for proposed change: the Utilization and Insurance Review Committee has been abolished; too confining to specify appointments from other commissions and committees whose make-ups change from year to year.

The Reference Committee reviewed this proposed revision to the Bylaws and recommended its adoption.

ARTICLE X Commissions

Section 5. Cooperation with Commissions

Any member of this Association who shall willfully refuse or fail to assist or cooperate with the investigations of any Association Commissions ((, especially those Commissions concerned with Grievance and Medical Defense))) may be subject to disciplinary action of the Council of the Association. This disciplinary action shall be taken by the issuance of a citation directed to the member, which citation shall be served either personally or by registered mail. Upon citation such members shall be given full opportunity to explain his refusal to cooperate with the Commission or Commissions. Nothing herein shall be construed as to require any member to condone or ignore an unethical act or an act of medical malpractice committed by a member of this Association. The Council, upon such hearing may excuse the non-cooperation, censor the member, suspend him for a definite period of time, expel him from membership. If the circumstances warrant, and by a majority vote of the members of the Council, the citation may provide

that such a member is suspended until the time of hearing fixed by the citation.

Reason for proposed change: outdated; no Commission deals with medical defense which was a review of malpractice suits filed.

The Reference Committee reviewed this revision to the Bylaws and recommended its adoption.

PROPOSED BYLAW CHANGE—NEW ARTICLE ARTICLE XIII

Delegate(s) and Alternate Delegate(s) to the American Medical Association

Section 1. Designation and Terms

a. Eligibility—To be eligible for election or appointment as a Delegate or Alternate Delegate to the American Medical Association, a member must possess the qualifications required by the bylaws under Article III, Section 2 a or b.

b. Terms—The House of Delegates at its regular meeting shall elect the AMA Delegate(s) and Alternate Delegate(s) for a two year term. The AMA Delegate(s) and Alternate Delegate(s) shall take office on the first of the calendar year following election for a period of two years.

Section 2. Election of AMA Delegate(s) and Alternate Delegate(s)

a. Nominating Committee—The Nominating Committee as set forth in Article VII, Section 2a shall report to the House of Delegates in the form of a ticket the name of at least one member for the office of AMA Delegate and one member for the office of AMA Alternate Delegate every second year when the AMA Delegate(s) and Alternate Delegate(s) are to be elected.

b. Time of Election—The report of the nominating committee and the election of officers and AMA Delegate(s) and Alternate Delegate(s) shall be the first order of business of the House of Delegates at the second session of the regular meeting of such House.

c. Nominations from the Floor—Nothing in this Article shall be construed to prevent additional nominations being made from the floor by members of the House of Delegates.

d. Method of Election—If more than one nominee is proposed for AMA Delegate or Alternate Delegate the vote shall be taken by written ballot. In case no nominee receives a majority of the votes cast on the first ballot, the nominee receiving the least number of votes shall be dropped from the list of nominees and a new ballot taken. This procedure shall continue until one of the nominees receives a majority of the votes cast, when he shall be declared elected.

Section 3. Failure to Fill Office

If before the expiration of the term for which he was elected, the AMA Delegate(s) dies, resigns, is removed from office, or becomes disqualified, the AMA Alternate Delegate(s) shall succeed to the office of AMA Delegate. Vacancies created by the death, advancement, resignation or removal of AMA Alternate Delegate(s) shall be filled by appointment by the Council for the unexpired portion of the term, or until the next annual meeting.

Section 4. Duties of AMA Delegate(s) and Alternate Delegate(s)

a. The AMA Delegate(s) shall attend meetings of the American Medical Association, shall serve on and be a member of the Council and shall perform other duties as custom requires or as assigned by the Council or by the House of Delegates.

b. The AMA Alternate Delegate(s) shall attend meetings of the American Medical Association, shall serve on and be a member of the Council and shall perform other duties as custom requires or as assigned by the Council or by the House of Delegates.

- c. Reports—The AMA Delegate(s) and Alternate Delegate(s) shall submit an annual report to the House of Delegates at the annual meeting.

Reason for proposed change: According to the Articles of Incorporation, Article VII, the AMA Delegate and Alternate Delegate are not considered officers of the Association; therefore, provision should be made for the AMA Delegate and Alternate Delegate by adopting a new Article in the Bylaws.

The Reference Committee reviewed this revision to the Bylaws and recommended its adoption.

REPORT OF THE COMMISSION ON PROFESSIONAL LIABILITY

We only had two meetings this year, but I feel that the attendance and the response of the members has been excellent. The following subjects were considered:

1. Evaluation of the malpractice exposure, as related by St. Paul Fire & Marine for the past year.
2. Recommendation through the newsletter to the Medical Association membership, regarding conduct on the witness stand.
3. Re-evaluation of the arbitration concept.
4. Efforts have been made to cooperate with the insurance carrier in evaluation of certain malpractice claims.

And as Chairman of the Professional Liability Commission, I am looking forward to a productive and meaningful period for the Liability Commission.

Respectfully submitted,
M. C. Rost, M.D.
Chairman

The Reference Committee considered the report of the Commission on Professional Liability. The Reference Committee recommended the acceptance of the report of the Commission on Professional Liability.

REPORT OF THE COMMITTEE FOR CONTINUING MEDICAL EDUCATION

At the present time in South Dakota, the Rapid City Regional Hospital has been accredited for giving Category I hours. Their program is actively underway. McKennan Hospital has been inspected and accredited and their program is actively underway. Sioux Valley Hospital, in Sioux Falls, South Dakota, has submitted their application. They have not been inspected as yet. The Watertown hospitals have been inspected; their classification has not yet been returned. The Medical School has been inspected. We do not yet have the formal results of their inspection, although it was done in October of 1977. The State Medical Association's last meeting was inspected and approved; therefore, the Medical Association can cosponsor Category I CME hours. Continuing coordination between the Continuing Medical Education Program of the Medical School and the South Dakota Medical Association with its affiliates has been quite active, and we anticipate that it will continue to be so.

Respectfully submitted,
K. Gene Koob, M.D.
Chairman

The Reference Committee reviewed the report of the Committee for Continuing Medical Education. The Reference Committee recommended adoption of this report.

REPORT OF THE GRIEVANCE COMMITTEE

The Grievance Committee is currently composed of Fred Leigh, M.D., Huron; G. E. Tracy, M.D., Watertown; T. H. Sattler, M.D., Yankton; Robert E. VanDemark, M.D., Sioux Falls; and W. R. Taylor, M.D., Aberdeen. The Grievance Committee has met on several occasions during the year and has handled the business presented to it.

Rules and regulations governing the activities of the Grievance Committee were sent to all district presidents and district secretaries in October, 1977. It is recommended that these rules and regulations be referred to when a district or an individual wishes to consult with the Committee.

Respectfully submitted,
W. R. Taylor, M.D.
Chairman

The Reference Committee reviewed the report of the Grievance Committee. The Reference Committee recommended the adoption of this report.

REPORT OF THE COMMITTEE ON LONG RANGE PLANNING

The Long Range Planning Committee has benefited from the fine attendance of the members and their sincere commitment to the responsibilities delegated this Committee. At the first meeting on September 13, 1977, the Committee identified ten areas that the Committee would evaluate and develop a monitoring program for these areas of study. This listing is attached.

Updating and follow-up has been facilitated by coordinating our study with the Medical Association Commission reports and actions of the Council. At the December 13, 1977, meeting, the Committee addressed all of the reports and recommendations regarding the previously established areas of study. Suggestions and/or recommendations were forwarded to respective commissions as indicated, and the Council was provided with reports.

The primary ongoing study and constant monitoring will be directed to the HSA programs in South Dakota. Jerry Maginn, who is the Medical Association Socioeconomic Coordinator, has been very effective in monitoring and researching data to facilitate the Long Range Planning Committee study of the HSA activities. Complete reports are on file with the Council and the Medical Association office.

In addition to updating the identified study areas at the March 21, 1978 meeting, a special HSA report was reviewed. One additional area of identified study was also added. It was felt the Geriatric (gerontology) Program study was an important area of concern, and the Committee believes this would be a major area of importance to the Medical Association, as well as the entire South Dakota populous.

The Committee further recommends that coordinated major attention this coming year should be provided by all of the involved Commissions of the Medical Association and be directed not only to supporting the Medical School geriatrics education program, but also stimulate public education and geriatrics (gerontology) medical care programs for our patients.

Detailed reports are on file with the Council and the South Dakota State Medical Association office.

Respectfully submitted,
T. H. Sattler, M.D.
Chairman

The Reference Committee reviewed the report of the Committee on Long Range Planning. The Reference Committee recommended the adoption of this report.

1. MEDICAL SCHOOL

- A. SDSMA representation on Medical School Executive Committee—Priority A
- B. Department heads as they relate to the practicing physician. (ad hoc Committee on Graduate Medical Education)
- C. Affiliated residency programs—Priority C

2. STATE HEALTH DEPARTMENT

- A. 5 year Plan for Public Health Nurses (Liaison Committee—Dr. Tracy will provide copy)
- B. Rate Regulation—Hospital and M.D.—Priority A

—(Legislative Commission and Executive Commission)

C. South Dakota Perinatal Project—Priority A

3. HSA

A. Medical Care Delivery Planning—Priority A—Long Range Planning Comm.

B. State Health Care Plan—Priority A—Long Range Planning Committee

4. NURSES ASSOCIATION

A. Nurse Practitioner Law—Priority A

B. Physician's Assistant Law—Priority A

1) Optometrist suggested legislation—Priority A

C. Indian Health Practitioner—Priority A
A—(all of the above—Comm. on Legis.)

D. Nurse Manpower Linkage Report—(Commission on Medical Service)

5. HOSPITAL ASSOCIATION

A. Rural Hospital Care—Priority A—(Comm. on Med. Ser. & Legis.)

B. EMS—Priority A Levels of Care (Comm. on Medical Serv.)

C. Medical Staff & Board Conflicts

D. Council of Affil. Teaching Hosp.—Priority D (Long Range Planning)

6. DEPARTMENT OF SOCIAL SERVICES

A. EPSDT—CHAP—Priority B (Dr. Heinrichs will prepare a summary—Long Ran. Plan.)

7. GOVERNMENTAL MEDICINE

A. Alcohol & Drug Abuse—Priority B

B. Concerns about proper Utilization of money and manpower—Priority A (Comm. on Legislation)

C. NHI—Priority A (Comm. on Legislation)

8. MALPRACTICE

(Comm. on Prof. Liability)

9. EVALUATION OF SDSMA

10. STATE AND FEDERAL INSTITUTIONS

A. Quality of Care (Comm. on Scientific Med.)
Improved Pregnancy Outcome Program (IPOP)
Sudden Infant Death Syndrome Program (SIDS)
Legislative Research Council (LRC) Study on Cost Containment

1978 Legis. Session Review & Update

REPORT OF THE SOUTH DAKOTA POLITICAL ACTION COMMITTEE

At a time when the private practice of medicine is being attacked from many directions including further attempts at government regulation and growing consumer distrust, we have few options. We can ignore the problems and do nothing to help solve them and get increasingly frustrated by the results, or we can try hard to affect our future by participating in the political process. Giving money to SoDaPAC, political parties or directly to candidates is the least we can do, and the political process is expensive! Better yet, we can give money and get personally involved, either in active work for a candidate or candidates or in seeking office ourselves.

1977 was a banner year for SoDaPAC—your Political Action Committee. More physicians and spouses became members than in any other year. This must reflect the growing awareness of physicians of the overriding importance of political decisions on their lives, including the right to the *private* practice of medicine.

Yet only 1 of 4 physicians in South Dakota joined SoDaPAC. We have a long way to go. 1978 is a crucial election year. Your SoDaPAC Board of Directors is committed to an intense campaign to enlist more members than ever

before. \$30 or, better yet, \$100 for sustaining membership is a **small** price to pay for the effective action of your PAC. That effectiveness has been vividly demonstrated in past elections and subsequent legislative action supported by those elected.

We encourage all members of the House of Delegates and the Council to become sustaining members to set the example for the general membership.

I hope, that when the SoDaPAC Chairman reports to you in 1979, he can say that 1978 was a most successful year!

Doctors—we are at the crossroads. Either we do something now or we had better not complain about what happens in the future.

Make your decision NOW!

Respectfully submitted,
T. J. Wrage, Jr., M.D.
Chairman

The Reference Committee reviewed the report of the South Dakota Political Action Committee. The Reference Committee recommended the adoption of this report.

REPORT OF THE ENDOWMENT ASSOCIATION

The Endowment Association met at the annual meeting and they have continued to be extremely active in the area of student loans. From January, 1977, to April, 1978, the Endowment Association loaned \$25,720.00 in student loans and \$4,876.14 to the Health Professions Loan Program which uses these funds in a 9-1 Federal matching program for student loans.

We are hopeful to have some conferences in the very near future regarding the further development of the Alumni Association. There have been some new members appointed to the Endowment Association Board of Directors. We are anxious for their input and to strengthen and renew some of the older programs and are looking forward to some new programs for the Endowment Association to continue our support and help for the students of the University of South Dakota Medical School in general.

Respectfully submitted,
Gerald E. Tracy, M.D.
President

The Reference Committee reviewed the report of the Endowment Association. The Reference Committee recommended the adoption of this report.

**ANNUAL MEETING
MINUTES**

**SOUTH DAKOTA MEDICAL SERVICE, INC.
CORPORATE BODY MEETING**

June 12, 1978, 9:00 a.m.

Howard Johnson Motor Lodge, Sioux Falls, South Dakota

Chairman Aspaas called the meeting of the Corporate Body of South Dakota Medical Service, Inc., to order at 9:00 a.m., on June 12, 1978, at the Howard Johnson Motor Lodge in Sioux Falls, South Dakota.

Upon roll call vote the following members of the Corporate Body of the South Dakota Medical Services, Inc., were present: Doctors James Ryan, Russell Harris, Duane Reaney, Winston Odland, Wm. Taylor, G. E. Tracy, Fred Leigh, B. C. Gerber, G. Robert Bartron, Bruce Lushbough, R. C. Jahraus, David Buchanan, Richard Gere, Paul Aspaas, Durward Lang, Wm. Rossing, Frank Messner, Gordon Held, A. J. Barrett, Roger Millea, Robert L. Stiehl, Ronald R. Lawrence, John Christopher, George McIntosh, James Larson, Bernie Hanson, James Rud, A. A. Lampert, Jr., Werner Klar, James DeGeest, Emil Hofer, C. J. Monson, Walter Baas, Bill Church, L. J. Hyland, Guy Tam, R. E. Gunnarson, L. W. Finney, D. L. Johnson, D. G. Ortmeier, R. J. Foley, Morris Radack, Carroll Isburg, H. O. Haugan, R. D. Bloemendaal, Stephen Haas, D. J. Hafner, A. J.

Javurek, M. George Thompson, Leonard Linde, and E. A. Johnson.

A quorum being present, the Chairman declared the annual meeting of the Membership of the Corporate Body of South Dakota Medical Services, Inc., to be duly in session for the transaction of business.

The Chairman presented to the Body his message as contained in writing in the Delegate's Handbook. He again took special note of the death of James Gormley and his years of service in the medical field. He further briefly outlined the continued growth of Blue Shield.

G. E. Tracy moved that the reading of the minutes of the last meeting of the Corporate Body, being the 1977 Annual Meeting, be waived, the same having been published in the corporate handbook previously mailed to each member. Such motion was seconded by Bruce Lushbough. Upon voice vote the same was approved unanimously.

At the request of the Chairman, President Erickson presented the financial report of South Dakota Medical Service, Inc., for the year of 1977, which financial report had also been previously published and mailed to each member.

Mr. Erickson also reviewed the Champus program as contained in the corporate handbook. He discussed the regionalization of the Champus program by the Army. Blue Shield of South Dakota no longer handles this program. Wisconsin Blue Shield was low bidder to administer the program regionally.

Dr. Russell Harris asked if Medicare claim costs, as shown in the reports, increased because of a larger group of people past 65. A discussion followed as to increased costs and the reasons therefore.

Dr. William Rossing asked about CAT scan payments. Mr. Erickson said such services are now paid for by Blue Cross.

Dr. Gerber asked about coordinating his clinic's inter-office computer billings with Blue Shield requirements. Mr. Erickson reviewed the problem with computer code systems being used by Blue Shield. Blue Shield claims personnel are trained in medical terminology. Claims processing would be slowed considerably if they had to use a code. It is hoped Blue Shield will be computerized within the next year. Until then it would help if doctors' offices would order diagnosis print-outs.

G. E. Tracy moved that the financial report be approved as presented and published. Dr. Russell Harris seconded such motion. Upon voice vote the same was approved unanimously.

The Chairman called for the report of the Nominating Committee. The Nominating Committee consisting of the following members:

Paul Aspaas, M.D., Chairman
James Larson, M.D.
William Taylor, M.D.
Bruce Allen, M.D.
Theodore Hohm, M.D.

The Chairman of the Nominating Committee noted that all three directors whose terms had expired were eligible for re-election to the board, namely, Roscoe Dean, M.D., Robert Bloemendaal, M.D., and James Jelbert. The Nominating Committee submitted those persons' names for re-election, as follows:

Roscoe Dean, M.D., of Wessington Springs, South Dakota;
Robert Bloemendaal, M.D., of Rapid City, South Dakota;
James Jelbert, of Spearfish, South Dakota
for three year terms. He stated that this concluded the report of the Nominating Committee.

The Chairman of the Board stated that the meeting was now open for nominations from the floor. No nominations were presented from the floor.

Dr. John Christopher moved that the nominations cease and that the Secretary be instructed to cast a unanimous ballot for the nominees, namely, Roscoe Dean, M.D., Robert Bloemendaal, M.D., and James Jelbert. Such motion was seconded by Dr. Werner Klar. Upon voice vote such motion was approved unanimously.

The Chairman called for consideration of agenda item entitled New Business. He asked the members if anyone had any new business they desired presented to the Corporation. No new business was presented at the meeting.

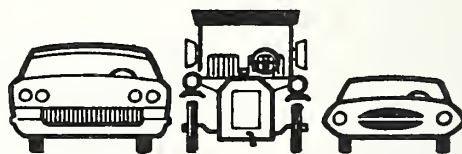
Dr. Aspaas then called for consideration of any additional old or new business. There being no further business, G. E. Tracy moved that the meeting be adjourned. Such motion was seconded by William R. Taylor. Upon voice vote the same was approved unanimously.

The meeting was duly adjourned at 9:45 a.m.

PRESIDENTIAL OATH OF OFFICE

I SOLEMNLY SWEAR THAT I shall carry out the duties of the President of the South Dakota State Medical Association to the best of my ability. I shall strive constantly to maintain the ethics of the medical profession and to promote the public health and welfare. I shall dedicate myself and my office to improving health standards and to the task of bringing increasingly improved medical care to the people of South Dakota. I shall uphold the Constitution and Bylaws of the AMA and the South Dakota State Medical Association. I shall champion the cause of freedom in medical practice and freedom for all my fellow Americans.

I do solemnly swear that I will discharge the duties of this office to the best of my ability, so help me God.



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This Is Your Medical Association

John Stransky, M.D., Watertown, explained to members of the Rotary Club the patient education program, Core Communications in Health, which has been established at St. Ann's Hospital. St. Ann's is the first in the state to join this program.

* * * *

R. David Rieth, M.D., board certified in physical medicine and rehabilitation, opened his private practice in the Rapid City Rehabilitation Hospital. He is a graduate of the University of Nebraska College of Medicine, and practiced in Thermopolis, Wyoming, prior to relocating in South Dakota.

* * * *

David Yecha, M.D. has established his office for the practice of family medicine in Gettysburg. Dr. Yecha received his M.D. degree from the University of Minnesota School of Medicine and recently completed his family practice residency in Sioux Falls.

* * * *

William Taylor, M.D., Aberdeen, announced the association of **Barry Welge, M.D.** in the practice of medicine. Dr. Welge graduated from the University of Minnesota School of Medicine and took his internal medicine residency training at Northwestern Hospital, Minneapolis. He recently completed a cardiology fellowship at the University of Minnesota Hospitals.

G. Robert Bartron, M.D., Watertown, pulled in the largest wall-eye, 4 lbs., during the Stony Point Centennial Walleye Classic at Lake Kampeska.

* * * *

The Corporate Body of South Dakota Blue Shield re-elected **Paul Aspaas, M.D.**, Dell Rapids, to serve as chairman of the board, Donald Howe, Lead, was re-elected vice chairman. Other directors re-elected were **Roscoe Dean, M.D.**, Wessington Springs, **Robert Bloemendaal, M.D.**, Rapid City and James Jelbert, Spearfish.

* * * *

Jerry L. Walton, M.D., L. H. Amundson, M.D. and Mrs. H. Phil Gross, Sioux Falls, participated in a forum sponsored by the Sioux Valley Hospital Education Center, on "Father's Health is a Family Affair."

* * * *

C. J. McDonald, M.D., Sioux Falls, read a paper at the 10th Annual Dakota History Conference held at Dakota State College.

* * * *

Clarence Sherwood, M.D., Brookings, died at age 86. Dr. Sherwood graduated from the University of Michigan School of Medicine in 1919, and served his internship at Providence Hospital, Washington, DC. He practiced in Madison, South Dakota, from 1923 to 1951 and in Fort Wayne, Indiana, from 1951 to 1961. He had been living in Brookings for the past two years. Dr. Sherwood was an honorary member of the Madison-Brookings District Medical Society and the South Dakota State Medical Association. He is survived by his wife, Ruth, one son, James of Cincinnati, Ohio; two daughters, Mrs. J. W. McCarty, Brookings, and Mrs. Paige Christiansen, Socorro, New Mexico, and nine grandchildren.

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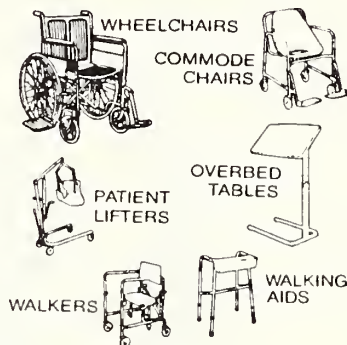
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 ‡Zadina, Milton Sioux Falls

‡—Resident

(continued from page 2)

Intensive Behavior Modification Workshop, Kansas City, MO, Oct. 20. Contact: Behavior Modification Technology, P. O. Box 3251, Tuscaloosa, AL 35401.
Infectious Disease, Mayo Foundation Outreach Seminar, McKennan Hosp. Aud., Sioux Falls, SD, Oct. 20-21. Category I AMA & AAFP credits. Contact: Sec., Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101.
63rd Annual International Scientific Assembly of Interstate Post-graduate Medical Association, Washington Hilton Hotel, Washington, DC, Oct. 23-26. Fee: \$75. AAFP credits: 24 hrs. prescribed, 4 hrs. elective. AMA Category I credits. Contact: Alton Ochsner, M.D., Interstate Postgraduate Med. Assoc., P.O. Box 1109, Madison, WI 53701.

Nutritional Components of Common Clinical Problems, U. of Texas Health Science Center, 5323 Harry Hines Blvd., Dallas, TX, Oct. 26-28. Fee: \$175. 15 hrs. Category I. Contact: Norma Wilcox, U. of Texas Health Science Center, 5323 Harry Hines Blvd., Dallas, TX 75235.
Tropical Disease, 17 day tour to India, Nepal and Afghanistan leaving Chicago Oct. 28, returning Nov. 13, sponsored by Chicago Med. Society. Tour fee: \$2,237; Sem. Fee: \$200. 42 hrs. Category I credits. Contact: L. C. Boylan, Dir., Membership Serv., Chicago Med. Soc., 310 S. Michigan Ave., Chicago, IL 60604.

Omaha Mid-West Clinical Society 46th Annual Postgraduate Assembly, Omaha Hilton Hotel, Omaha, NE, Oct. 30-Nov. 1. Contact: Lorraine E. Seibel, Ex. Sec., 540 Medical Bldg., Omaha, NE 68102.

November

23rd Annual Clinical Conference, "Cancer of the Genitourinary Tract," Shamrock Hilton Hotel, Houston, TX, Nov. 2-3. Contact: Stephen C. Stuyck, Inf. Coord., M.D. Anderson Hosp. and Tumor Inst., Houston, TX 77030.

16th National Conference on Physicians & Schools, Hyatt Regency O'Hare, Chicago, IL, Nov. 9-10. Contact: AMA Div. of Scientific Activities, Dept. of Health Ed., 535 North Dearborn St., Chicago, IL 60610.

Third National Conference on Joint Practice, Dallas, TX., Nov. 9-11. Contact: National Joint Practice Commission, 35 East Wacker Dr., Suite 1990, Chicago, IL 60601.

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Future Meetings

October

35th Anniversary Meeting, Association of American Physicians and Surgeons, Brown Palace Hotel, Denver, CO, Oct. 5-7. Fee: \$50. Contact: AAPS, 2625 Butterfield Rd., Oak Brook, IL 60521.

Genetic Services for the Community, Earle Brown Continuing Education Center, U. of Minnesota, St. Paul, MN, Oct. 12-13. Fee: Physicians—\$85; Others—\$45. Contact: Office of CME, Box 293, Mayo Memorial Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455.

Soft Tissue Injuries and Problems of the Head and Neck, Hennepin County Medical Center, Minneapolis, MN, Oct. 12-13. Contact: Office of CME, Box 293, Mayo Memorial Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455.

Eighth Annual Conference, Computers in Health Care: Are They Worth It? Registry Hotel, Minneapolis, MN, Oct. 12-14. AMA Category I hrs. Contact: Society for Computer Medicine, 1901 N. Ft. Myer Dr., Suite 602, Arlington, VA 22209.

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Third Annual Perinatal Conference, Howard Johnson Motor Lodge, Rapid City, SD, Oct. 12-14. 16.5 hrs. AMA Category I credits. Contact: Margo Varcoe, RN, Ex. Sec., South Dakota Perinatal Assoc., Sioux Falls, SD 57107.

106th Annual Meeting, American Public Health Association, Los Angeles, CA, Oct. 15-19. Contact: APHA, 1015 18th St., N.W., Washington, DC 20036.

Physician Compensation and Contracting, The Homestead, Hot Springs, VA, Oct. 18-20. Fee: \$335. Contact: Registrar, Aspen Systems Corp., 20010 Century Blvd., Germantown, MD 20767.

Neurologic Aspects of Learning Disabilities for Professionals, L'hotel de France, Bloomington, MN, Oct. 20. Contact: Office of CME, Box 293, Mayo Memorial Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455.

Obstetrics and Gynecology Autumn Seminar, IDS Center Conference Theater, Minneapolis, MN, Oct. 25-27. Fee: \$170. Contact: Office of CME, Box 293, Mayo Memorial Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455.

Treatment of Family Sexual Abuse, U. of Minnesota, Minneapolis, MN, Oct. 25-27. Fee: \$100. Contact: Office of CME, Box 293, Mayo Memorial Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455.

Prevention of Coronary Heart Disease, Spring Hill Conference Center, Wayzata, MN, Oct. 27-29. Contact: Office of CME, Box 293, Mayo Memorial Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455.

November

Cardiology Today, U. of Iowa College of Medicine, Iowa City, IA, Nov. 6-9. Contact: Richard M. Caplan, M.D., Assoc. Dean for CME, U. of Iowa College of Medicine, Iowa City, IA 52242.

Third National Conference on Joint Practice, Fairmont Hotel, Dallas, TX, Nov. 9-11. Contact: National Joint Practice Commission, 35 E. Wacker Dr., Suite 1990, Chicago, IL 60601.

Orthopedics, Mayo Foundation Outreach Seminar, McKennan Hosp. Aud., Sioux Falls, SD, Nov. 17-18. Category I AMA & AAFP credits. Contact: Sec., Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101.

Current Progress in Obstetrics and Gynecology

A Series of 12 Lectures

Lecture #8

GENETICS IN OBSTETRICS AND GYNECOLOGY

by
Virginia P. Johnson, M.D.*

Medical Genetics is a relatively new discipline. The first chromosomal error in man was reported in 1959, a trisomy 21 state in Down's syndrome. Since then numerous chromosomal and genetic conditions have been described. McKusick¹ catalogs over 2,000 Mendelian traits in man. Although individually genetic diseases are rare, collectively they are not uncommon. As a discipline, genetics cuts across all fields of medicine.

Relative to obstetrics and gynecology, medical genetic assessment is needed in four areas: birth defects, infertility/sterility, fetal loss and prenatal diagnosis.

BIRTH DEFECTS

The family history is invariably obtained during the first prenatal visit. This should further be (1) expanded to include information regarding familial diseases, birth defects, mental retardation, pregnancy loss, sterility, and consanguinity, and (2) recorded in a pedigree form for brevity and clarity as to line of relationships. The pedigree should alert the clinician of a possible genetic disorder in the family. In the vast majority of cases, further inquiry regarding the specific diagnosis in the affected relative will reveal an environmental or developmental cause with negligible risk of recurrence. Simple counselling could allay unfounded fears. Where a genetic condition is identified, counselling will vary with the heritability of the gene—dominant, recessive, or multifactorial. Depending upon carrier state and the disease in question, prenatal diagnosis may or may not be indicated.

In reference to birth defects in general, a solitary organ system abnormality is probably developmental and sporadic or multifactorial with a low risk (Table 1) recurrence, e.g., cleft lip and palate or failure of fusion of muellerian ducts. However, multiple organ system involvement could point to a chromosomal or genetic error, e.g., cleft palate, microcephaly, coloboma, congenital heart defect and polydactyly in D trisomy. Thus, babies born with major and minor anomalies need further genetic evaluation.

All cases with ambiguous genitalia, whether mild or severe, should have chromosome studies. The mild cases of imperforate hymen in females and undescended testes in males could just as well be a male testicular feminization in the former and a female adreno-genital syndrome in the latter.

INFERTILITY/STERILITY

Well-known entities involving chromosomal non-disjunction fall in this category. Turner's syndrome with short stature, amenorrhea, failure of development of secondary sex characteristics, dysmorphic features such as short webbed neck, cubitus valgus, increased moles, coarctation of the aorta, kidney anomalies is due to 45 XO chromosome complement. Klinefelter's syndrome with eunuchoidism, sterility, small testes is due to 47 XXy chromosome complement.

A good number of amenorrhea/sterility cases are far from classic. The basis for such phenotype variation is the underlying chromosomal abnormality of the X that can range from mosaicism, deletion of the short arm or long arm, isochromosome, translocations, inversions and rings.

Specific gene mutations on the X chromosome can also account for amenorrhea/sterility states. In the pedigree (Fig. 1) illustrated, the index cases were sisters (arrows) evaluated for amenorrhea and failure to feminize at 17 and 13 years of age. Clin-

*Assistant Professor, Department of Obstetrics and Gynecology, School of Medicine, University of South Dakota, Vermillion, South Dakota. Medical Geneticist, Center for the Developmentally Disabled, Division of Allied Health, University of South Dakota, Vermillion, South Dakota.

cal findings include: female external genitalia, short vagina, ? uterus, elevated FSH, low estrogen. Chromosome studies showed 46 Xy chromosomes. Laparotomy revealed absent uterus and gonadal dysgenesis with seminiferous tubules. Four maternal "aunts" were also amenorrheic and sterile. Chromosome studies were also 46 Xy on all four. Admittedly, amenorrhea/sterility is not a grave illness. However, accurate diagnosis is important. The undescended dysgenetic testes, more likely to undergo malignant degeneration, should be removed. Estrogen therapy can promote feminization and prevent psychological repercussions.

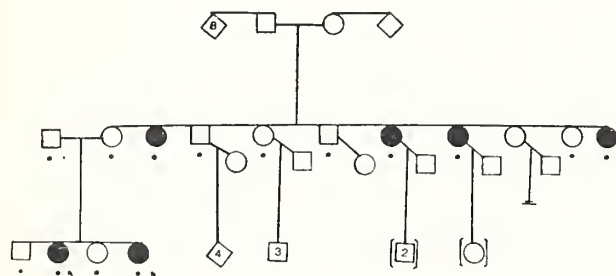


Figure 1

Xy Gonadal Dysgenesis Family. Index cases indicated by arrows. □ male, Xy chromosomes; ○ female, XX chromosomes; ● female, Xy chromosomes (male pseudohermaphrodite); • karyotype done; () adopted; ◇ four of both sexes; ⊥ no issue. The index cases and four sterile maternal "aunts" are actually chromosomal and gonadal males with Xy gonadal dysgenesis. (Dr. H. Theissen)

FETAL LOSS

As much as 15% of all pregnancies are spontaneously aborted due to both maternal and fetal factors. However, three or more abortions should raise concern as to possible genetic or chromosomal errors, especially in the absence of hormonal deficiency or local uterine abnormality. In the next pedigree (Fig. 2, 3) multiple abortions was the reason for family referral. A 13/14 translocation abnormality was found in the mother (arrow), maternal aunt, uncle and grandfather. Fortunately for the family, they have not had a retarded child with Patau's syndrome. The multiple abortions represent chromosomally unbalanced zygotes. For such balanced translocation carriers, amniocentesis for prenatal diagnosis is an option to assure the birth of normal children.

PRENATAL DIAGNOSIS

Amniocentesis was popularized by Liley in the 1960's for the Rh-sensitized pregnancy and is now widely accepted as a safe, reliable diagnostic tool. Current indications for amniocentesis include:

(1) Assessment of fetal maturity to determine optimum time for delivery in pregnancies

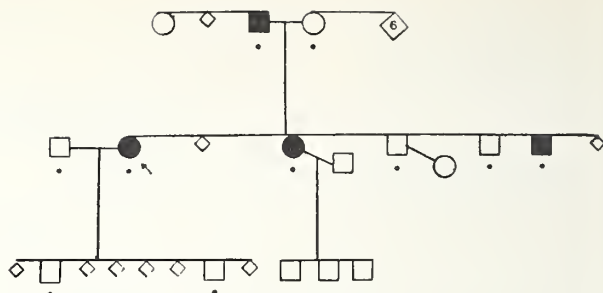


Figure 2

D/D Translocation Family. The index case indicated by arrow had six abortions, probably chromosomally unbalanced zygotes. ● are translocation carriers for 13/14, balanced state. (Dr. M. Mutch)



Figure 3

Karyotype of D/D translocation carrier. The carriers shown in Fig. 2 are physically and mentally normal. Although chromosome 13 and 14 are abnormally joined, there is no actual loss nor gain of chromosome material.

complicated by diabetes, maternal isoimmunization, repeat Cesarean section, premature labor.

- (2) Assessment of fetal jeopardy in erythroblastosis fetalis, intrauterine growth retardation, suspected anencephaly, suspected fetal distress.
- (3) Prenatal diagnosis.

In a well-established High Risk Clinic, roughly 90% of amniocentesis is done for assessment of fetal maturity or jeopardy, 10% for detection of genetic disorders. Specific indications for prenatal diagnosis are:

- (1) Carrier status for a chromosome abnormality in a parent, e.g., translocation, inversion, mosaicism.
- (2) Previous child with a chromosome anomaly, e.g., trisomy 21 (Down's syndrome), trisomy D (Patau's syndrome).
- (3) Advanced maternal age, i.e, 36 and above.
- (4) Maternal carrier state for an X-linked recessive disorder for fetal sexing.

- (5) Carrier state for an inborn error of metabolism in both parents usually identified through an affected child or population screening, e.g., Tay Sach's disease, mucopolysaccharidoses.
- (6) Previous child with neural tube closure defect or positive maternal serum alpha fetoprotein screen.

The timing of amniocentesis depends upon the indication, the third trimester for evaluation of fetal health and the second trimester for diagnosis of fetal abnormality. For prenatal diagnosis, 15-16 weeks is the ideal time for the following reasons: pregnancy has proceeded beyond the first trimester when abortions due to unbalanced zygotes would normally occur, the uterus is accessible abdominally, enough fluid can be drawn safely, cell number and viability in culture is optimal, a diagnosis is obtainable in four weeks within legal timelines (24 weeks in most states).

A prerequisite of amniocentesis for prenatal diagnosis is a signed informed consent detailing possible complications, e.g., bleeding or leakage of fluid vaginally, amnionitis, spontaneous abortion; failure to obtain fluid at any one attempt, poor cell viability in culture making chromosome or biochemical analysis unusable, misinterpretation of karyotype or biochemical assay; no absolute guarantee as to normality of the fetus. The safety and accuracy of midtrimester amniocentesis for prenatal diagnosis was analyzed by the National Institute of Child Health and Human Development (NICHD) in a prospective study of 1,040 subjects and 992 controls. "Immediate complications (vaginal bleeding, amniotic fluid leak) occurred in approximately 2%. There was no statistically significant difference between the two groups in the rate of fetal loss (3.5% for the subjects, 3.2% for the controls) or incidence of complications of pregnancy or delivery". Newborn examination and physical, neurologic and developmental status at one year were similar in both groups. Diagnostic accuracy was 99.4%.²

There are minor, yet significant variations in midtrimester amniocentesis that should be closely observed. Prior ultrasonography is ideal to diagnose possible twins, to localize the placenta, to assess age of gestation, to estimate amount of amniotic fluid and to locate the best site for the tap. The presence of twins should preclude any attempt at prenatal diagnosis since there is no way to tap individual sacs nor assign individual diagnosis to respective fetuses. The placenta should be avoided if at all possible. A bloody fluid invariably leads to poor cell growth in culture and frequently necessitates a

repeat tap. If the fluid is used for alpha fetoprotein assay, fetal blood contamination will lead to false positive results. Theoretically, placental puncture can lead to fetomaternal transfusion, hence possible sensitization of the Rh negative mother by an Rh positive fetus. Accurate assessment of fetal age by biparietal diameter or crown rump measurement is essential in interpretation of alpha fetoprotein values. And of course, sonography facilitates amniocentesis by localizing the best site of amniotic fluid pool.

Following the conventional antisepsis and local anesthesia, a 20 gauge spinal needle with stylet in place is used. Resistance will be offered by the abdominal wall, fascia, and uterine muscle to gradual insertion. Remove the stylet and watch for fluid to come. Do not aspirate to avoid maternal blood contamination. Replace the stylet with further insertion. With a 5 cc plastic syringe, aspirate 1-2 cc and set aside, possibly discard. With a 20 cc plastic syringe, aspirate 15 cc, repeat with another syringe. Remove syringe from the needle prior to withdrawal. Replace syringe caps and transport in this manner or in 15 cc sterile, plastic conical capped centrifuge tubes. Cells adhere to glass surfaces and can be lost through several container transfers. The fluid is set up as soon as possible, results usually available in four weeks. The patient is advised to report any untoward reactions. Some centers routinely perform a Kleihauer test for fetal hemoglobin on maternal blood, following amniocentesis to detect fetomaternal hemorrhage, allowing administration of anti-D gammaglobulin to the at risk Rh negative mother.

Amniotic fluid cells can be processed for chromosome analysis or for biochemical assay. Abnormalities in chromosomal number, e.g., Down's syndrome, Turner's syndrome, are easily evident. Abnormalities in structure, e.g., small deletions of chromosome

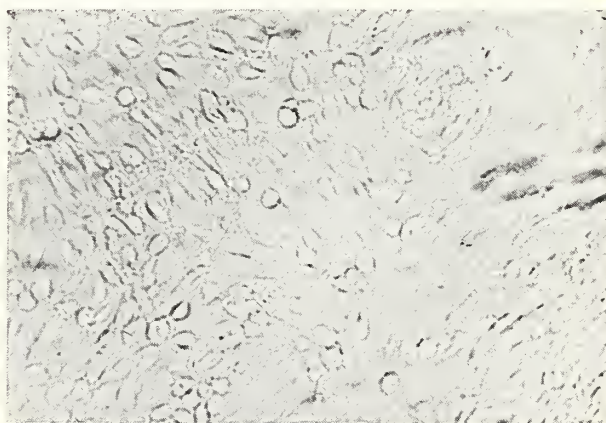


Figure 4
Amniotic fluid cells in culture 14 days just prior to harvest (Dr. L. Petersen)

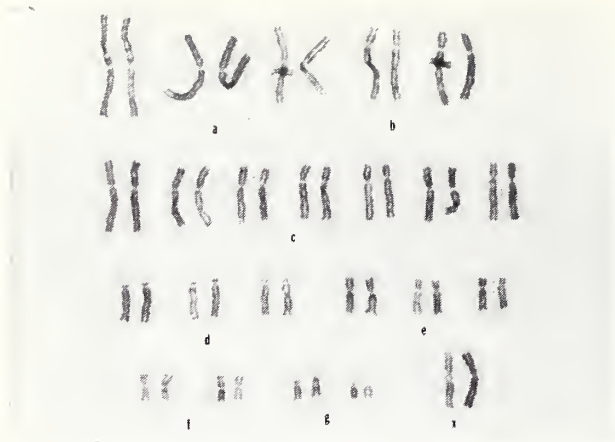


Figure 5

Normal 46, XX chromosomes in amniotic fluid cells from an elderly mother. (Dr. C. Stoltz)

material, can be quite subtle, ascribed to normal variation and possibly missed. Reports conventionally state "46 XX or 46 Xy, probably normal". It should be emphasized during the counselling session that these tests are done only on an indicated basis. Thus, chromosomal studies to rule out Down's syndrome in the older mother, hexosaminidase A assay in the Tay Sach's carrier, etc. The possibility of an abnormal child still exists secondary to other adverse genetic or environmental factors.

Cell free amniotic fluid from all taps is routinely assayed for alpha fetoprotein levels. Neural tube closure defects are not uncommon with a population incidence of .14-.41 percent, and a risk recurrence of 4.4-5.2 percent in siblings of an affected. Alpha fetoprotein is a dominant protein of fetal life, present in fetal serum by the sixth week, gradually disappearing at term. It is elevated in conditions that allow seepage of fetal serum into the amniotic fluid: absence of overlying skin in anencephaly, meningomyelocoele and exomphalos, abnormal glomerular filtration in congenital nephrosis,

fetal disintegration in missed abortion. Normal values vary throughout pregnancy, hence the importance of accurate assessment of gestational age. False positives are often due to fetal blood contamination during amniocentesis. False negatives are mostly due to "closed" neural tube defects which may represent as much as 5-10% of all cases. There is a current move towards routine screening for alpha fetoproteins in maternal serum in all pregnant females since the vast majority of neural tube defects occur in couples with a negative family history.

In the NICHD study of midtrimester amniocentesis, of the 1,040 women, "95% were advised that no abnormality was detected in the fetus. Amniocentesis served to provide reassurance, assistance in having normal children, and in numerous instances, avoidance of abortion."²

Contrary to common belief, there are treatment modalities available for genetic diseases: replacement of missing product, thyroxin in cretinism; reduction of excess substrate, phenylalanine in PKU; reduction of excess metabolite, copper in Wilson's disease; replacement of missing enzyme or coenzyme. A noteworthy achievement is the in utero therapy of a fetus with methylmalonicaciduria (MMA) diagnosed following amniocentesis in a mother identified "at risk" by virtue of a previous retarded child that died of MMA. Vitamin B12 orally and parenterally in large doses was administered during the third trimester. B12 forms cobalamin coenzymes necessary in the degradation of methylmalonic acid. On last report at 19 months, psychomotor development was normal in what would otherwise have been a retarded child.³

With the eradication of contagious diseases, the control of infectious diseases, the decrease in morbidity and mortality, there should be an increase in genetically determined disease states in clinical practice.

Table 1
EMPIRIC RISKS OF COMMON GENETIC DISORDERS

Malformation	Population Incidence	Risks to 1° Relatives, (siblings, children of index case)	Risk Increase Compared With General Population
Cleft lip (± cleft palate)	1/1,000	30-50/1,000 (α 4 percent) varies with severity in index case - unilateral CL - 2.5 percent, bilateral C1 & P - 6.1 percent	40 X
Pyloric stenosis	5/1,000 males 1/1,000 females sex ratio 3-5:1	male index case: brothers—3.8-9.6 percent sons—5.5 percent sisters—2.7-3.0 percent daughters—2.4 percent] 25 X] 10 X

(continued)

EMPIRIC RISKS OF COMMON GENETIC DISORDERS

Malformation	Population Incidence	Risks to 1° Relatives, (siblings, children of index case)	Risk Increase Compared With General Population
		female index case: brothers—9.2-12.5 percent sons—18.9 percent sisters—3.8 percent daughters—7.0 percent	1 50 X 1 30 X
Neural tube defect	.14 to .41 percent	4.4 - 5.2 percent in siblings	7-15 X
Congenital hip dislocation	1/4,000 males 1/600 females at 1 year of age	female index case: brothers 1/150 sisters 1/20 male index case: brothers 1/25 sisters 1/15	30 X 30 X 160 X 40 X
Congenital heart malformations	6/1,000 at school age	2-4 percent	20-40 X

Types: 20 percent VSD, 20 percent PDA, 10 percent each aortic coarctation, transposition of great vessels, tetralogy, pulmonary stenosis, ASD, and others

Note: Data from Carter, 1976

Acknowledgement: I would like to thank the following physicians for inclusion of their patients in the paper: Drs. Hubert Theissen, Milt Mutch, Loren Petersen, Charles Stoltz. The cytogenetic laboratory is in the Department of Laboratory Medicine, School of Medicine, USD.

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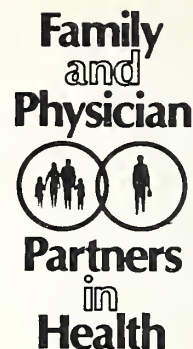
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SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
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AAFP CONGRESS APPROVES GOALS AND OBJECTIVES

To mark the Academy's 30th Anniversary, the 1977 Congress of Delegates affirmed the reasons for establishment stated in the AAFP Constitution in terms of current objectives toward its primary goals. Those goals are:

- Excellence in health care for the American People;
- Effective representation of family physicians, and service to them.

The Academy's objectives in pursuit of its goals and activities to accomplish these objectives are as follows:

(A) To acknowledge and assume responsible public advocacy in all health-related matters.

1. Extend activity in medical, social, legislative and governmental areas to influence the climate and circumstances of health care delivery.
2. Intensify efforts in patient education, encouraging individuals to participate actively in their own health care.
3. Emphasize cost containment in all medical applications to the extent that it is compatible with good care.
4. Promote the benefits of comprehensive, continuing health care to Americans while working toward the goal of 25 percent of medical school graduates entering residency training in family practice.

(B) To maintain high standards in family practice.

1. Support intraprofessional peer review and prompt, effective correction of deficiencies.
2. Maintain creative, active involvement in identifying and refining appropriate skills and knowledge in the specialty of family practice.
3. Emphasize the development of educational settings and skilled faculty to provide all family physicians with optimal training and review experiences.

(C) To encourage and assist young men and women in preparing, qualifying and establishing themselves as competent, caring family physicians.

1. Build on its existing leadership in providing avenues for medical students and family practice residents to express their concerns and participate in AAFP programming.
2. Develop services to meet the expressed needs and concerns of physicians-in-training.
3. Provide information and contact with strong role models so that young persons are aware of family practice as a professional career possibility.

(D) To preserve family physicians' right to perform procedures for which they are qualified and in which they demonstrate competence.

1. Continue aggressive activity within organized medicine to assure hospital privileges for family physicians consonant with education, training and demonstrated competence.
2. Encourage and assist family physicians to be informed advocates for their specialty, in order to increase

understanding among peers and promote cooperative efforts in the delivery of health care while preserving their right to function optimally.

3. Strive for fair professional liability insurance premiums for family physicians performing procedures for which they are qualified.

(E) To provide relevant educational opportunities to practicing family physicians and encourage their participation in them.

1. Provide a self-assessment program.
2. Maintain a continuing medical education approval mechanism that assures widespread participation by sponsoring institutions of quality educational programs.
3. Continue creative, efficient production of *American Family Physician*, the Annual Scientific Assembly, seminars and workshops to meet the learning needs of family physicians.
4. Cultivate sensitivity to future developments and needs in physician education and provide the most helpful materials and environments.

(F) To promote the science and art of medicine and surgery and the betterment of the public health, and to preserve the right of free choice of physician to the patient.

1. Articulate and demonstrate the multiple benefits of comprehensive, continuing health care.
2. Guard against any threat to patients' freedom in choosing their physician, or obtaining good health care.
3. Assist family physicians to achieve practice productivity without sacrificing quality of care or confidentiality of patients' records.
4. Encourage family physicians to consider financial cost in relation to benefits throughout the course of diagnosis and treatment, and inform the patient appropriately about anticipated costs in addition to clinical, social, regulatory and reimbursement factors which bear on his or her continuing care.

In addition, the AAFP will strive to increase its organizational strength and potential for service by:

- Facilitating convenient and effective two-way communication with individual members and its organizational components.
- Promoting the complementary nature of national, state, regional and local chapters of the Academy, so that functions are performed by the most appropriate of those bodies.
- Encouraging active participation of all members to build and identify broad leadership ranks.
- Increasing the number of members.
- Underscoring its prerogative to speak on behalf of family physicians and the unique contributions of family practice.
- Continuing to improve the planning and execution of administrative functions to anticipate future developments and achieve maximum service and cost effectiveness.

President's Page

The cost of medical care is high. So is the cost of everything else. Inflation is generally credited by knowledgeable people with being the major factor involved. Charges and countercharges abound about who and what is responsible for the inflation. National government as yet has failed to admit any responsibility for it, blaming instead nearly every other segment of the economy, but singling out for special attention, "health care." "Health care" of course, encompasses a myriad of activities in the eyes of the government, from social and welfare programs that are called "health care programs" to the traditional areas of physician and hospital activities. Most of these programs and the spending that goes with them have been forced on the citizens by our Federal Government, who then in its wisdom, turns around and complains in a loud voice about the costs involved.

Regardless, however, of the reasons for the high costs, we as physicians must be specifically concerned about the present impact of medical care costs on the pocketbooks of our patients. We should continue to challenge government spending habits and do all we can to educate people about the real impact of these government programs for the long run, but we also must address the here and now as best we can.

National voluntary effort is already succeeding in the area of hospital costs and we as physicians, should take an active part in this program on our local levels. For example, strong participation in local peer review and utilization review activity, addressing the cost issue as well as the quality issue, goes a long way to assuring the citizens they are getting the most for their hospital dollar without sacrificing their real medical needs.

Another area in which we can influence costs concerns our own fees. Dr. Tom E. Nesbitt, President of the AMA, in his inaugural address, called upon all physicians "to voluntarily restrain the **rate** of professional fee increases." He asked that physicians reduce their **rate** of fee increase by 1 percent in each of the next two years. There is an already existing downward trend in the rate of professional fee increases nationally. He pointed out that if each physician would moderate his rate of increase by the above, then according to the Consumer Price Index figures, "our fee escalation rate would be close to the all-items rate, perhaps even under it, if recent all-items price increases continue." He further stated that "this request is reasonable because it is asking no more of individual physicians than we are asking of other components of the medical system."

I agree. I hope you do, too.

Fraternally yours,
Russell H. Harris, M.D., President
South Dakota State Medical Association

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Editorial

SOUTH DAKOTA "STATE HOSPITAL" CARE: A STATEWIDE MEDICAL CHALLENGE?

by
George C. Flora, M.D.*

The youth who have come into professional schools over the past 25 years are a delightful lot. They represent the more talented, the better endowed, the more energetic and enthusiastic of our society. A superb group as a whole, fully capable of perpetuating the professions with capable hands.

Almost without exception, they come with idealism and noble goals, but those entering the medical schools seem to have somewhat more noble goals and even greater idealism than other students. The medic comes dedicated to helping mankind rid itself of the dark plagues of disease and death and "to save the world." They never doubt that they have the potential for this superhuman endeavor.

The idealism and noble goal emote from them like an euphoric nectar and they are a happy lot which is pleasing to those of us who associate closely with them.

When they encounter the "professional school," the curriculum and inept teaching tend to smother their idealism and obscure their more noble goals. Throughout the four years of medical school, these "helpers to mankind" are converted to "scientist," a delusion emblazoned like a brand upon each one of them. This is not totally destructive in itself, but when accompanied by an unnecessary competition to survive, tend to redirect even their noble goal to that of personal achievement and survival. The idealism has changed from "saving people" to "solving a problem" and the goal changed from helping mankind to "personal achievement" becoming an

M.D.). As they leave the schools, they are different—proud, cool, confident problem solvers who bubble little and who seldom laugh.

One cannot argue with that which happens to them; this evolution is realty. A problem for these nice humans does arise when the goal, which has become the degree, is achieved. This has become a personal, yet quite selfish goal. When achieved, often they are too weary to seek another goal, drifting with only materialistic pseudogoals. Their fate is made even worse once the degree goal is achieved. As their experience in medical practice begins, the fallacy of their delusion of "scientist" and their proud confidence fades. They often turn to things recreational or economic to solve their discomfort and frustrations rather than returning to the noble goal of learning the art of helping mankind.

This route is traveled with little awareness or insight as to the course taken. We do not appreciate the loss of idealism and the noble goal. Dissatisfaction with the present, an awareness of lost enthusiasm, and a lack of happiness seldom are recognized as the end of this trip.

I think conscious choosing of a new "noble goal" and a conscious rekindling of "idealism" need only to be chosen to regain elation and happiness which was so much a part of this group at an earlier day.

Those of our state could well look to the greatest needs of our state to find worthy noble goals. The most obvious ones being: 1) Care of our psychiatrically ill in the "state hospital," 2) Education in general and medical education in particular, 3) Help for our "native Americans."

A goal most worthy and in greatest need might

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well be bringing the state of South Dakota a psychiatric care program equal to the best. The severely ill psychiatric patients in our communities and the most ill in our state hospital need, deserve, and should have the best care available. I have seen none in other states or nations in 25 years who receive poorer care or greater neglect.

If this high goal and noble purpose were adopted by our state physicians, I would have no fear that achievement would be successful and rapid. The efforts of a random group would not want for imaginative and intelligent direction.

Were one to describe an approach pattern, it would be a framework map. First, the physician group should see the need and appreciate the inadequacy of the facilities as they exist today. This would be easily accomplished by attendance at regular neuropsychiatric seminars held in our state hospital; ask for them and they would be developed. The physicians might request a scheduling of an AMA convention to be held on the grounds of this institution where the entire membership could again see how their most ill patients were faring and how they are housed and "treated" for their illness.

Secondly, the physician group could lead and organize colleagues in law, education, and clergy to develop grass roots support to help in this noble goal to upgrade care in this institution. Two initial needs might be:

1) to organize a **nonpolitical, long-tenured** supervising body taking its membership from respected groups of society; namely, law, education, medicine, agriculture, labor, clergy, business, and politics. Intellectual direction without political influence sitting for tenure of ten years is needed badly!!

2) to provide a financial base, **divorced from political influence**, perhaps derived from a tax on every bottle of booze, beer, or wine, and earmarked to be spent at the direction of the supervising body **is needed badly!!** (50% of the population of this institution is there because of Alcoholism.) Fifty cents a "fifth," a quarter per "jug of wine," or ten cents a "brew" would be a "prepaid hospital plan" which could achieve independent financing of a psychiatric care program which could become equal to the best.

It might take a referendum to do it but it could be done.

To choose a "noble goal," to fire up some enthusiastic idealism is more restful than a cruise and happier than Christmas.

After a **real state hospital**, then maybe a good education system and medical school??

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Special risk patients PERCOCET®-5 should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

ADVERSE REACTIONS The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients, and some of these adverse reactions may be alleviated if the patient lies down.

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Letters To The Editor

KAWASKI DISEASE—The South Dakota Journal of Medicine revisited.

In May 1969 this Journal carried the transcript of a Clinicopathological Conference¹ which had been held a few months earlier. The discussor felt not satisfied for all this time with the pathological conclusion. The recorded discrepancy between the clinical and pathological diagnosis testifies to that fact.

To recapitulate the findings of this patient briefly: A nine month old Caucasian male was admitted to the hospital with a three day history of fever up to 39.5° C. (103° F.), loose greenish colored stools and a maculopapular eruption over the trunk and extremities for 24 hours 2 days prior to admission. On admission he still had a temperature of 39.5° C. (103° F.), a red pharynx with tonsillar exudate and signs of minimal dehydration. The laboratory values were a hemoglobin of 10.0 gm. %, a leukocytosis of 11,800 with an essentially normal differential count and a negative urine analysis. The cultures of the throat and stool revealed later a normal flora.

During the hospitalization, the child had a lumbar puncture because of varying degrees of nuchal rigidity, the results of which were normal. A tachycardia, but no rhythm disturbance or EKG were recorded. The chest roentgenogram showed a minimal right basal pneumonitis. The patient continued throughout the hospital stay to spike temperatures between 38.8° C. to 39.5° C. (100-103° F.) which were not responding to various antibiotics. Multiple diagnostic tests and another spinal tap showed no abnormal results even though pathological neurological signs were recorded.

On the 12th day after admission the child convulsed suddenly and expired under symptoms of a cardiac arrest.

The autopsy showed arteritis and periarteritis changes of the small and middle sized arteries, especially the coronary arteries, and involving to a lesser degree the pulmonary arteries and veins. The final pathological diagnosis was: Periarteritis Nodosa (Acute Necrotizing Arteritis).

It is extremely rare that the clinician has an opportunity for a successful rebuttal in face of the overwhelming evidence of pathological slides. However in rediscussing this patient with the pathologist and editor of the conference, we have come to the conclusion that this patient really represents a case of

Kawasaki disease. This disease was first described in 1967 in Japan as the Mucocutaneous Lymph Node Syndrome (MCLS).² The first article in English appeared in 1974 describing it as Mucocutaneous Lymph Node Syndrome (MLNS).³ The first American case reports were published in 1974 describing Hawaiian children as far back as 1971.⁴ There is now overwhelming evidence that the infantile periarteritis nodosa is the severe and fatal form of Kawasaki disease.⁵

This disease is now more frequently diagnosed and has been recognized again just recently in South Dakota.⁶ It appears therefore timely to review briefly the symptomatology.

Since 1975 there were in the United States (as of 1-1-78) 232 suspect cases reported to the Center for Communicable Diseases. 112 patients were confirmed clinically out of 117 in which the information was sufficient to be applied against diagnostic criteria.⁷

These are:⁸

- 1) Fever lasting for five or more days and unresponsiveness to antibiotics.
- 2) Bilateral congestion of ocular conjunctive.
- 3) Changes in the lips and oral mucosa, including dry red fissuring (strawberry tongue) and diffuse reddening of the oropharyngeal mucosa.
- 4) Changes in the peripheral extremities including reddening of the palms and soles (early stage), indurative edema (early stage) and membranous desquamation, often perungual (later stages).
- 5) Polymorphous nonvesicular truncal exanthem.
- 6) Acute nonsuppurative enlargement of the cervical lymph nodes.

If five of these six criteria are met and no other cause can explain the illness, the diagnosis of Kawasaki disease is very likely.

A causative organism is not yet identified, however the preponderance of children of Japanese extraction in Hawaii, aside from the ongoing epidemic in Japan is peculiar.⁹

In retrospect it is difficult to demonstrate in this patient all clinical signs or symptoms of Kawasaki disease but they may have been overlooked (e.g. the injection of the ocular conjunctiva and the edema of the hand and feet) or misinterpreted (the lymph node tenderness for nuchal rigidity). The fact that the child died under symptoms of a cardiac arrest and showed at the time of autopsy the findings of "infantile periarteritis nodosa" must now be interpreted as the fatal form of Kawasaki disease.⁵ These along with the suggestive clinical picture made us now suspect a different diagnosis.

Nevertheless the disease is a serious problem which may require intensive care and cardiac monitoring because of cardiovascular problems to which 1.7% (5) - 2% (3) of the patients succumb. If this disease is now more frequent or only more often diagnosed remains to be seen.

It behooves us all to be on the alert for this "new" childhood disease and it is satisfying to know that the Journal described nine years ago a disease which was not yet known in the English literature.

R. D. Schultz, M.D. E. H. Heinrichs, M.D.
Sioux Falls, South Dakota Vermillion, South Dakota

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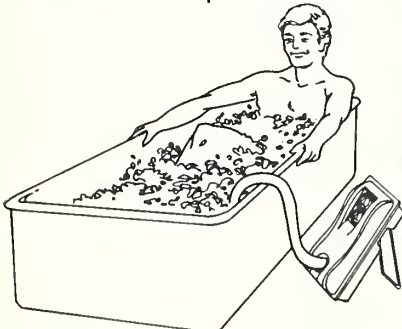
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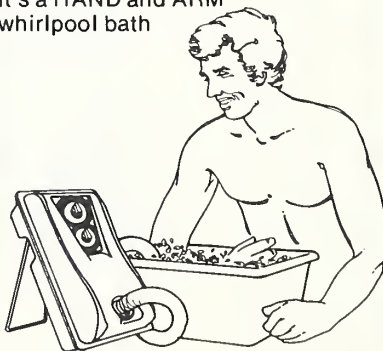
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CLINICOPATHOLOGICAL CONFERENCE

From the Intern and Resident Teaching Conferences at the Sioux Valley Hospital, conducted by the Department of Pathology of the Hospital and of the School of Medicine of the University of South Dakota



TWO WEEK OLD CHILD WITH DIFFICULTY BREATHING

R. W. Harms, M.D.*
J. R. Reynolds, M.D., FACS***
Discussers

J. F. Barlow, M.D., FCAP**
Pathologist-Editor

Case No. 752417

This two-week old female infant was admitted to Sioux Valley Hospital because of difficulty breathing and cyanosis of approximately four days duration.

The child was a term, spontaneous vaginal delivery of a 29-year-old gravida 2, para 1 mother. Birth weight was 3,572 grams. The baby was described as a little dusky at birth in the nurses notes. The Apgar was 9 at one minute and 9 at five minutes. The child did well in the hospital except for one "dusky" episode and did well at home except for being sleepy a good deal of the time. About four days prior to admission, the patient began to have increased difficulty breathing and was fussy. The mother noticed some cyanosis about the face. This increased during the two days prior to admission and the patient was admitted after an x-ray showed haziness of the right upper lung field. There was no history of difficulty with nursing, vomiting, diarrhea or other problems. There was no past medical history or family history of lung difficulties. The single sibling was well.

PHYSICAL EXAMINATION: The child was felt to be in mild respiratory distress by one examiner and minor respiratory distress by another. Respiratory rate was 52 per minute and pulse was 152 per minute. There was some minimal cyanosis about the mouth. Examination of head, eyes, ears, nose, and throat were unremarkable. The neck was supple. The chest was symmetrical. There were some sternal retractions with short, panting-type respirations. Breath sounds were generally increased and there were a few rales heard over both lung fields and occasional ronchi. The heart revealed no abnormal sounds or murmurs. Examination of the abdomen revealed a protuberant abdomen with no palpable organs or masses. The genitalia were normal female.

LABORATORY DATA: Urinalysis was hazy yellow, specific gravity 1.008, pH 7.0, negative for protein, glucose, ketone bodies, reducing substances, bile and hemoglobin; sediment 2-4 white cells per high power field, occasional red cell per high power field, no casts. There was a large amount of bacteria and a small amount of epithelium. Hemoglobin 18.1 gms/dl. Red count 4.96 million/mm³. Hematocrit 55 vols/dl. Mean corpuscular hemoglobin 36 micromicrograms. Mean corpuscular volume 109 cubic micra. Mean corpuscular hemoglobin concentration 33%. White count 7,000/mm³ with 30% segmented neutrophils, 1% neutrophilic bands, 5% eosinophils, 64% normal lymphocytes. The red cells showed slight anisocytosis but were normochromic. The platelets were normal in number and morphology. These blood studies were considered normal for the age of the patient.

Sweat chloride determinations were 26 and 50 meq/L. determined by a chloride specific electrode. A quantitative test with weighing the sweat was 26 meq/L. Culture of the sputum revealed no pathogens. Chest x-ray revealed a volume loss in the right upper lobe with mediastinal shift to the right and hyperexpansion of the left lung. Follow-up lung films showed more volume loss in the right lung with shift of the mediastinum toward the right and atelectasis in the right, mid and upper lung field. There was gross over-expansion of the left lung and herniation of the apical area of the left lung into the right thoracic area. The diaphragm was depressed. (Fig. 1) No foreign body was

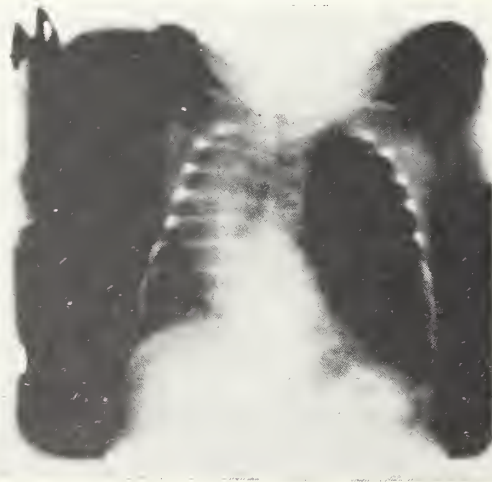


Figure 1

Preoperative chest film showing radiolucency of left hemithorax with shift of mediastinum toward right.

* Resident in Family and Community Medicine, Sioux Falls, SD.

** Pathologist, Laboratory of Clinical Medicine and Sioux Valley Hospital; Professor of Pathology, School of Medicine, University of South Dakota.

*** Surgeon, Sioux Valley Hospital and Central Plains Clinic, Sioux Falls, SD and Assistant Professor of Surgery, School of Medicine, University of South Dakota.

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noted. A barium swallow was unremarkable, revealing no vascular rings. A bronchogram revealed three main lobar bronchi on the right. The principle abnormal process was thought to be in the left lung. A ventilation scan showed decrease in the early ventilation of the left lung, particularly the upper portion of the left lung. After a time there was complete filling of both lungs but rebreathing studies showed marked hang up of radionuclide on the left. A perfusion scan showed diminished perfusion to the upper lobe. (Fig. 2) An operation was performed.

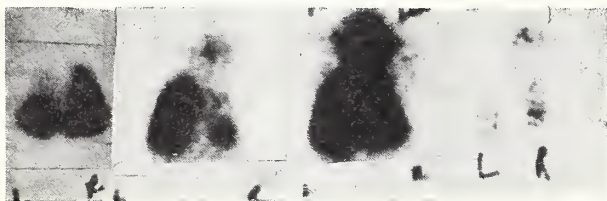


Figure 2

All posterior views—reading from right to left: A) Early ventilation showing poor ventilation on left, B) Attempted breath holding with uniform ventilation of both lungs, C) Rebreathing ventilation illustrating trapping of radionuclide on left, D) Perfusion scan demonstrating poor perfusion to left upper lung field.

DR. HARMS: We are presented with the problem of determining the etiology of difficult breathing in a two week old female infant. This difficulty is accompanied by minimal cyanosis about the mouth. Although the infant had good Apgar scores at birth, there is a suggestion that the possible etiology was present early in life, because of duskiness at birth and of one episode of duskiness in the nursery. The presenting illness had a relatively rapid onset of 4 days preceding admission to the hospital at two weeks of age. When one begins to think of a differential diagnosis, this presenting complaint makes one think first of the cardiovascular and pulmonary systems. Nothing is mentioned in the protocol to lead one to suspect cardiac disease as the etiology. No murmurs or abnormal sounds are heard and no mention of cardiomegaly or abnormal cardiac configuration is made.

Review of the protocol gives several findings leading one to think of a pulmonary etiology. The chest was symmetrical. There were sternal retractions and short, panting-type respirations. Chest x-rays progressed to show volume loss in the right upper lobe with hyperexpansion of the left lung and mediastinal shift to the right. Atelectasis developed in the right lung. Herniation occurred of the apical area of the left lung into the right thorax. The diaphragms were depressed. Bronchogram revealed normal lobar bronchi on the right, but an abnormality of the left lung. Ventilation-perfusion scan showed decreased early ventilation of the left lung then retention of radionuclide on the left. Perfusion scan also showed decreased perfusion to the left upper lobe.

This clinical picture suggests several etiologic possibilities. An initial possibility could be tension pneu-

mothorax, producing the mediastinal shift and compression atelectasis of the right lung. However, no collapse is seen of the left lung and the entire left lung ventilates on ventilation scan. Therefore, tension pneumothorax can be ruled out as the diagnosis.

Congenital cystic adenomatoid malformation of the lung may produce mediastinal shift, anterior mediastinal herniation of lung, and respiratory distress. It is a rare variant of congenital cystic disease. The etiology is felt to be based on overgrowth of pulmonary tissue in the region of the terminal bronchioles and alveolar ducts. Grossly this lesion appears as massive and fleshy unilobar enlargement of pulmonary tissue. Microscopic examination reveals cystic degeneration, excessive terminal bronchiolar tissue, and areas of premature alveolar differentiation. These abnormal areas are interspersed in areas of normal lung tissue. Premature infants with hydramnios or anasarca are frequently afflicted. The presenting symptom is respiratory distress soon after birth. The affected lobe is irregularly aerated during the first few days of life and air accumulates leading to overexpansion of the affected lobe. The x-ray appearance is fairly specific and the clinical means by which to differentiate this from congenital and acquired cystic disease, lobar emphysema, and diaphragmatic hernia. Initially the affected lobe may be seen as a solid structure. This progresses to be a density with radiolucent areas. Treatment is by lobectomy if the displacement phenomenon increases and distress of the infant occurs. If symptoms are less marked, and no operation is done; they later in life inevitably become secondarily infected and then require lobectomy. The x-ray description of the case today does not describe this condition. Also, complete filling of this lesion by radionuclide would not be expected, as was the finding in today's protocol.

Congenital diaphragmatic hernia may present a similar clinical picture as today's case; but it is not a likely etiology, since no loops of bowel are seen in the chest x-ray. In addition, the barium swallow is normal and does not show loops of bowel or stomach in the chest. The abdomen was described as protuberant. In diaphragmatic hernia the abdomen may be scaphoid since abdominal organs are in the chest.

Two very likely diagnostic possibilities remain. These are congenital pulmonary cyst and the complex of infantile lobar emphysema. These two entities are often difficult to differentiate by clinical or x-ray findings.

Congenital pulmonary cysts are usually limited to one lobe and may be either single or multiple.

Origin is either bronchogenic, alveolar, or a combination of both. Cysts have been recorded to have been found in embryos as well as in newborns. The origin is postulated as being initiated by anomalous development of terminal bronchioles or early alveolar formation. After the onset of respiration, an alveolated cyst develops on the basis of expiratory obstruction through an area of bronchiolar narrowing. Air filling of the cyst occurs in inspiration with negative intrapleural pressure either directly through the bronchus or through the pores of Kohn. This air is trapped by obstruction to expiration either by collapse of bronchioles or closure of the pores of Kohn as intrapleural pressure becomes less negative.

Grossly these cysts are usually single, multiloculated, unilobar, peripheral, air-filled cysts with a tracheo-bronchial communication. These cysts deflate with needle aspiration. Microscopically, the cyst wall contains bits of smooth muscle and perhaps cartilage and is lined with columnar epithelium. These cysts may become infected and contain purulent material. If this occurs, it is difficult to differentiate microscopically from a staphylococcal pneumatocele, which is an acquired cystic lung lesion secondary to staphylococcal pneumonia. Acquired pulmonary cysts can also occur, but are lined by squamous epithelium and not columnar epithelium as congenital cysts are.

The congenital lung cyst may acutely or chronically distend and lead to progressive increase of intrathoracic tension, compression of remaining unilateral lung and of diaphragm, mediastinal shift, and contralateral atelectasis. Acute distension is not unusual in the neonatal period. Distension may also slowly and chronically occur, which usually leads to infection of the cyst. Symptoms then are cough, fever, hemoptysis, and repeated localized pulmonary infection as the cyst develops into a pulmonary abscess. X-rays of the uncomplicated, uninfected congenital pulmonary cyst show a circular or oval, thin-walled, air-filled cavity containing fine strands of lung. Infected cysts will likely represent a density on x-ray and perhaps a fluid level will be present.

The problem in today's case is certainly not an infected acquired cyst since the white cell count and differential are normal; the sputum grew no pathogens; and the x-ray description mentions no density or fluid level.

Congenital pulmonary cysts rarely undergo spontaneous resolution. Intrapleural rupture may occur with tension pneumothorax and collapse of the cyst. Other outcomes are infection with abscess formation, recurring disabling bronchopneumonia, or acute expansion with suffocation. Usual treatment is,

therefore, elective thoracotomy with removal of the cyst attempting to leave as much functioning pulmonary tissue as possible. Needle aspiration has been tried, but is usually unsuccessful in that the cysts recur.

Pulmonary cysts of cystic fibrosis and Letterer-Siwe disease need to be ruled out. Cystic fibrosis was ruled out in this case with the normal sweat chloride determinations. Cysts of Letterer-Siwe disease are usually seen in association with other manifestations of the disease and have a granular appearance on chest x-ray.

I feel the most likely etiologic possibility in this case is congenital lobar emphysema. Congenital lobar emphysema or infantile lobar emphysema, as some authors prefer to name it, is also characterized by overdistension and air trapping in the affected lobe, compression of remaining lung tissue, and displacement of the mediastinum by herniation of the emphysematous lobe across the anterior mediastinum into the opposite chest. Infantile lobar emphysema is a correct term, because this disease is not necessarily a congenital defect of lung parenchyma, but develops secondary to some cause. It is mainly a disease of early infancy. Most cases present before 6 months of age and 50 per cent occur in the first 4 weeks of life. Males predominate about 2:1 over females in incidence.

The disease is usually unilobar and confined to either an upper or middle lobe. It may be bilobar. Two cases in one series required pneumonectomy. It may even be segmental. A 10-14 per cent incidence of congenital heart disease is associated with congenital lobar emphysema. This is usually ventricular septal defect or patent ductus arteriosus.

The etiology is not definitely established. Several anatomic mechanisms can result in lobar emphysema. These will be discussed shortly. In many cases (up to 50%), however, an exact etiology cannot be demonstrated and etiology is classed as idiopathic.

On gross examination, when these emphysematous lobes are surgically removed, the lobes are pink and spongy and balloon out of the chest wound. These overdistended, emphysematous lobes do not deflate when exposed to atmospheric pressure when the bronchus has been severed. Microscopically there is overdistension of alveolar walls with eventual fragmentation and rupture of alveolar walls.

Symptoms of acute distress may develop the first day of life or mild symptoms may be present. The child may be asymptomatic for an interval until distress develops. Increased tension in the chest leads to tachypnea, tachycardia, and cyanosis. Auscultation shows less air entry on affected side and increased resonance to percussion on affected side.

Small emphysematous blebs may rupture. Deformity of the pliable chest may develop in severe cases with elevation of the anterior rib cage on the affected side and spreading of the ribs. This did not occur in our case today, perhaps because the disease had not progressed long enough.

Chest x-rays show gross overdistension of the affected lobe and herniation across the midline into the opposite chest through the anterior mediastinum. The remaining lung lobes may be compressed and atelectatic. On fluoroscopy, the emphysematous lobe remains constant in area in inspiration and expiration. The diaphragms are depressed, as in today's case, and do not dome with expiration. Bronchograms demonstrate incomplete distal filling of affected bronchi. Pulmonary scans show reduced perfusion of affected parenchyma, as was the finding in today's protocol.

The young infant is felt to be most susceptible to develop lobar emphysema. The anterior chest wall is pliable and the anterior mediastinum is relatively large in infants compared to the more rigid chests of children 6 months and older. Although elastic recoil is initially the same in all lobes, in the gravitational field there is increased positive intrapleural pressure at the lung bases and a more negative pressure at the apex. In the supine position, the anterior lung fields are ventilated better than the posterior fields. Because of the pliable anterior chest wall and spacious mediastinum, over-expansion of upper, anterior lobes or segments may occur. This is because these segments are most easily ventilated and most easily hyperexpand. Most authors theorize a physical obstruction to expiration as the factor causing overdistension resulting in emphysematous change of a lung lobe.

Reversible infantile lobar emphysema may develop from bronchial obstruction secondary to secretions such as amniotic debris and infection, or to foreign body with surrounding bronchiolar inflammation. Overdistension and emphysematous change occur because inspired air is trapped on expiration. These etiologies in today's protocol are not likely since sputum cultures were negative and no foreign bodies were seen on chest x-ray or bronchogram. ECHO virus can also cause secretions and obstruction and lead to lobar emphysema, but the case today is not described as a viral illness. These etiologies could be definitely ruled out by bronchoscopy, but bronchoscopy is considered by many to be too hazardous in infants and is usually not done. Also, in emphysema secondary to bronchiolitis, multiple areas are often involved and the emphysema often reverses with therapy of the illnesses. It can, however, progress to irreversible emphysema if se-

vere enough. The same is true also if a foreign body is removed before the emphysema has progressed to become irreversible.

Extrinsic bronchial obstruction can also be caused by mediastinal or peribronchial bronchogenic cysts. The bronchogenic cyst is the most frequent cause of external bronchial obstruction. These fluid filled cysts result from respiratory tissue developing unassociated with or pinched off from the tracheobronchial tree in the embryo. The mediastinal bronchogenic cysts can be demonstrated by esophagogram. In the present protocol, the barium swallow was normal, so the possibility of mediastinal bronchogenic cyst is ruled out. However, a peribronchial bronchogenic cyst may be present.

Other etiologies of extrinsic compression are patent ductus arteriosus or anomalous pulmonary artery. There have been two cases of dividing and reanastomosing of these anomalous vessels causing obstruction. Patent ductus arteriosus is not likely, since no murmur was heard on cardiac examination.

Intrinsic bronchial obstruction may be due to lack of bronchial cartilage development or immaturity and redundant bronchial mucosa acting as a valve. One set of authors question if immature cartilage in an infant is actually abnormal. In both of the situations, air can be readily inspired with negative intrapleural pressure, but bronchial lumen obstruction occurs with expiration secondary to collapse of the airway causing air trapping.

Regardless of the etiology when an emphysematous lobe is diagnosed, excisional therapy, which almost always means lobectomy, is the treatment of choice. Seldom is the emphysema reversible. The usual course is relentless progression to increased tension emphysema. Conservative, nonoperative treatment of severe cases results in 50 per cent mortality.

I believe the case presented today represents infantile lobar emphysema. Although congenital pulmonary cyst and infantile lobar emphysema may have the same chest x-ray appearance, the left upper lobe was perfused on radionuclide scan, although diminished in quantity compared to the normal lung. I would not expect a pulmonary cyst to be perfused on scan. Ventilation scans could conceivably be similar in both situations. Several anatomic etiologic possibilities of infantile lobar emphysema were ruled out, but etiologies that remain are peribronchial bronchogenic cyst, anomalous pulmonary artery, deficient or immature bronchial cartilage, or bronchial mucosal valves. Any of these could have caused the abnormal bronchogram on the left. It is also possible that no etiology of the bronchial

obstruction leading to lobar emphysema was found.

DR. HARM'S DIAGNOSIS

Infantile Lobar Emphysema

DR. REYNOLDS: Was there absent perfusion or decreased perfusion in the perfusion lung scan in the left upper lobe?

DR. BARLOW: There was minimal perfusion to almost absent. I believe I will show the lung scan now and we can discuss them along with the x-rays.

We were very fortunate to have an adequate ventilation lung scan in an infant this age. On the initial breathing of 133 Xenon gas there is good ventilation of the entire right lung but the left lung only slowly fills. (Fig. 2) As the patient continues ventilation and we were able to catch a period of time when the patient was holding his breath, there is good ventilation to all lobes of both lungs. When the patient was rebreathing room air, there is marked trapping of the radionuclide on the left. The perfusion scan demonstrates markedly diminished to absent perfusion in this left upper lobe area.

The surgical specimen was the left upper lobe which measured 7 x 5 x 1.5. There was marked hyperinflation but the lung was totally normal grossly and microscopically. One bronchus showed a questionable deficiency in cartilage over one area microscopically. This is hard to evaluate but cartilage deficiency of the bronchus has been implicated in causing congenital lobar emphysema in infancy. Unfortunately, the possible abnormal area of bronchus is left in the patient as the bronchial stump.

DR. REYNOLDS: Dr. Harms gave an excellent and complete discussion. However, I would like to mention one other entity in the differential diagnosis which gave us a great deal of trouble, i.e. atelectasis. In this case it would be atelectasis of the right upper and right middle lobes. There are two mechanisms, which can produce mediastinal shift to degree seen in this case. The mediastinal is either pushed in the direction of the shift or pulled in the direction of shift. Secretions could have plugged the bronchus partially producing emphysema as Dr. Harms described, but they could have completely occluded the bronchus to the right lung producing atelectasis with compensatory shift of the mediastinum in that direction. In this case, however, the mediastinum looks more like it was pushed in that direction. If atelectasis of the right lung had been

the culprit, I would have expected the rib spaces to be more narrowed on that side and less widened on the opposite side. I also would have expected elevation of the right diaphragm. (Fig. 1) This degree of herniation of the mediastinum would also be unlikely in atelectasis. The distinction between atelectasis and lobar emphysema is important because the treatment of congenital lobar emphysema is surgical, but the treatment for atelectasis would be bronchoscopy with suction and hyperventilation. The mechanism of hyperinflation in lobar emphysema is partial obstruction with air entering on inspiration but being trapped on expiration (check valve). In atelectasis there is total obstruction and air is absorbed. Another misleading factor in this case was that the child did not have the severe respiratory distress usually seen in cases of infantile lobar emphysema. Because of the difficulties of treatment we did ask for a ventilation and perfusion scan. This was helpful in confirming the diagnosis. It is interesting that we have reviewed the literature and found evidence that perfusion scans have been done in lobar emphysema but we could not find a report of a ventilation scan.

It should be noted that some patients who survive this disease have gone on to adulthood. The affected lung does not seem to become more hyperinflated and the patients seem to do fairly well.

At the time of surgery, the left upper lobe was markedly hyperinflated and bulged forth from the chest. There was no evidence of vascular abnormality or mediastinal cyst which might have caused bronchial compression. A left upper lobe lobectomy was performed without difficulty. The baby has done well since. A post-operative chest x-ray shows the mediastinum to be in relatively normal position.

***DR. CHARLES B. SULLIVAN:** Why was there delayed filling on the early studies on the ventilation scan?

DR. BARLOW: I believe because as the lung becomes hyperinflated due to the obstruction on expiration due to the check valve mechanism, pressure builds up in the segment so that it also becomes difficult to freely ventilate that area.

****DR. M. STASSEN:** Is there any serious radiation damage from the ventilation perfusion scan in an infant?

DR. BARLOW: In most patients it is excreted within a few minutes. In this case there is trapping in the left upper lobe and possibly prolonged minimal radiation damage but this area was removed.

DR. REYNOLDS: I would like to mention that this condition is more common in the upper lobes as was true in this case.

*Resident in Family and Community Medicine, Sioux Falls, SD.

**Resident in Family and Community Medicine, Sioux Falls, SD.

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Another extremely interesting use of this AFP has been the finding that it is elevated in the serum and amniotic fluid of pregnant patients who have fetuses with open neural tube defects such as anencephaly. Whether AFP will be used routinely in the early detection in these neural tube defects will have to await further study.

John F. Barlow, M.D.
Pathologist

Reference: Lang, P.H. and Fraley, E.E. "Serum Alpha Fetaprotein and Human Chorionic Gonadotropin in the Treatment of Patients with Testicular Tumors" *The Urologic Clinics of North America*, Vol. 4, 393; October, 1977.



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AUXILIARY NEWS

STATE AUXILIARY HONORED AT NATIONAL CONVENTION

For the past several years, South Dakota State Medical Association Auxiliary has consistently received recognition at National Convention. At the AMA Auxiliary National Convention held in St. Louis, South Dakota Auxiliary received the AMA-ERF award for the state auxiliary in the North Central Region with the largest contribution per capita. Receiving the award for Mrs. Alden R. Heupel, State AMA-ERF chairman for 1977-78, was Mrs. James C. Larson, president-elect.

The South Dakota State Medical Association and the Auxiliary have through combined contributions raised \$19,111.62 for the year 1977-78. Each district has, through various fund raising projects, worked diligently to make this possible.

At the opening meeting of the AMA House of Delegates in St. Louis, Auxiliary President, Mrs. Chester L. Young, presented to Dr. Hubert A. Ritter, AMA-ERF President, a check for the National Auxiliary's AMA-ERF contribution of \$1,577,372.53. In thanking Mrs. Young and the auxiliaries for their "leadership, hard work and dedication to continuing excellence in medical education," Dr. Ritter told the House of Delegates that he had just recently returned from attending the South Dakota State Medical meeting. He said how impressed he was with our fund raising project in the form of our AMA-ERF auction at the time of the Friday night Hawaiian Luau.

The Auxiliary wishes to thank our spouses for their enthusiasm and spirit in which they cooperate with our efforts—whether they be the gifted auctioneers, the generous bidders or the good sports, who sing and dance at the bidding of the audience.

1977-78 was a successful year for the State Auxiliary. In her presidential report at State Convention, Mrs. Bill G. Church reviewed the accomplishments of the year. She stated that Auxiliary educational efforts do not stop with fund raising for the Medical School. Throughout the state, auxiliaries are involved in service-oriented and special projects such as providing scholarship grants to young people entering the health care field, volunteering in child abuse programs, aiding in screening of pre-school children . . . "fortunate fours" and implementing the immunization education program in many communities. They spend endless hours of cooking, sewing, selling and serving in behalf of hospitals and medical education and participating in meals-on-wheels programs. A conscientious and personal effort is made by many

auxiliaries to reach out and welcome wives and families of medical students and residents.

Mrs. Church concluded, "To me, there is no such thing as a typical doctor's wife . . . each one is special and unique, willing to give of her time and talent for such a variety of good causes, often doing all of these things at the same time she holds down a professional position in her own right."

Mrs. Robert VanDemark

State Auxiliary President, 1978-79

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*Gary Melvin
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Future Meetings

November

Principles of Colon and Rectal Surgery, Mayo Memorial Aud., Minneapolis, MN, Nov. 1-4. Cat. I AMA credits. Fee: \$225. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Recent Advances in Medical Renal & Surgical Genitourinary Tract Pathology, U. of Minnesota, Minneapolis, MN, Nov. 2-3. Cat. I AMA credits. Fee: 1 day—\$60, 2 days—\$120. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., SE, Minneapolis MN 55455.

Management of the Acutely Ill, U. of Minnesota, Minneapolis, MN, Nov. 3. Cat. I AMA credits. Fee: \$45. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Refraction for the Non-Ophthalmologist, University Hospitals, Minneapolis, MN, Nov. 8-10. Cat. I AMA

credits. Fee: \$140. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Medical Oncology for Primary Care Physicians, U. of Michigan Medical Center, Ann Arbor, MI, Nov. 13-14. Cat. I credits. Contact: Office of CME, Towsley Center for CME, U. of Mich. Med. School, Ann Arbor, MI 48109.

Intensive Course in Pediatric Nutrition, U. of Iowa College of Medicine, Iowa City, IA, Nov. 13-17. Contact: Richard M. Caplan, M.D., Assoc. Dean for CME, U. of Iowa College of Medicine, Iowa City, IA 52242.

Orthopedics, Mayo Foundation Outreach Seminar, McKennan Hosp. Aud., Sioux Falls, SD, Nov. 17-18. Category I AMA & AAFP credits. Contact: Sec., Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101.

Medical and Surgical Aspects of Childhood Emergencies, U. of Michigan Medical Center, Ann Arbor, MI, Nov. 17-18. Cat. I credits. Contact: Office of CME, Towsley Center for

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Diagnosis and Evaluation of Pain Problems, Sheraton-Ritz Hotel, Minneapolis, MN, Nov. 17-18. Cat. I AMA credits. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Postgraduate Conference on Obstetrics and Gynecology, U. of Iowa College of Medicine, Iowa City, IA, Nov. 28-29. Contact: Richard M. Caplan, M.D., Assoc. Dean for CME, U. of Iowa College of Medicine, Iowa City, IA 52242.

Diagnosis and Management of Arrhythmias, U. of Michigan Medical Center, Ann Arbor, MI, Nov. 28-30. Cat. I credits. Contact: Office of CME, Towsley Center for CME, U. of Mich. Med. School, Ann Arbor, MI 48109.

December

Prospective Rate Setting, MGM Grand Hotel, Las Vegas, NV, Dec. 4-6. Contact: Registrar, Aspen Systems Corp., 20010 Century Blvd., Germantown, MD 20767.

Current Progress in Obstetrics and Gynecology

A Series of 12 Lectures

Lecture #9

PREMATURE RUPTURE OF THE MEMBRANES

by

Howard (Tom) Gilmore, M.D.*

Premature rupture of the membranes presents a serious, potentially life threatening problem to the patient. At term, the primary concern is neonatal infection and amnionitis, if the interval from membrane rupture to delivery is prolonged. When the fetus is premature, the risk of infection must be weighed against the risk of developing respiratory distress syndrome.

A widely accepted definition of premature rupture of the membranes is rupture which precedes the onset of labor.¹ Others have attempted to further define this problem by including a statement about the duration of the latent period. The definition must be clearly stated when comparing the results of different series.

The reported incidence of premature rupture of the membranes varies from 2.7% to 17%, but usually falls in the range of 7-12%.² The wide variation in incidence is a reflection of the definition accepted by individual authors. Despite the wide variation in incidence, there is general agreement that there is an increased prevalence of membrane rupture in premature gestations compared to those at term. Mothers of infants weighing less than 2500 grams have premature rupture of the membranes in as many as 20% of the cases.²

The etiology of membrane rupture is generally unknown. When preceded by traumatic amniocentesis or the dilatation of an incompetent cervix, the cause is apparent. Except for these uncommon circumstances, the cause cannot be determined. Several risk factors have been suggested for individual patients, but cannot be shown to be statistically sig-

nificant in a series. Among these factors are intrauterine and cervical infection, abdominal trauma, unfavorable lie, and increased maternal age.² It has also been suggested that premature rupture may be related to an inherent weakness of the membranes; however, Danforth was able to demonstrate that the tensile strength of the membranes was not dependent on their thickness, and that the force needed to burst membranes that had ruptured prematurely was greater than the force generated by normal labor at term. Polishuk⁴ demonstrated that the tensile strength of membranes was inversely related to fetal weight. These studies indicate that membrane rupture is not caused by an inherent weakness of the membranes.

The latent period is defined as the time between membrane rupture and the onset of regular uterine contractions. This interval is different for term than for preterm gestations. Approximately 80% of the patients at term will be in labor within 24 hours of membrane rupture. In preterm gestations, less than 50% will be in labor within 24 hours, and 10% will not have begun labor 14 days after membrane rupture.² The length of the latent period usually decreases with increasing gestational age. Its duration is related to the incidence of amnionitis and neonatal infection, and may be inversely related to the incidence of RDS in certain infants.

Studies involving human and animal models have suggested that one pathway of pulmonary surfactant production is mediated by adrenal glucocorticoids which act as enzyme inducers in the fetal lung. Conditions which stress the fetus, including placental insufficiency, diabetes mellitus, maternal hemoglobinopathy, and heroin addiction are associated with accelerated pulmonary maturity.⁵ Several authors^{5,6}

*Assistant Professor, Department of Obstetrics and Gynecology, University of South Dakota School of Medicine, Yankton, South Dakota.

have implied that membrane rupture also provides a stress to the fetus which causes an increased output of glucocorticoids. If sufficient time passes between membrane rupture and delivery, maturation may occur so that the incidence of RDS is decreased. Berkowitz⁵ and Yoon⁶ have shown a significant decrease in the incidence of RDS if the membranes are ruptured longer than 16 hours prior to delivery when the gestational age of the fetus is 33-36 weeks. Other authors⁷ have been unable to confirm this relationship. As a result, the issue remains unsettled.

Perinatal mortality and morbidity is increased in pregnancies complicated by premature rupture of the membranes. Overall perinatal mortality associated with premature rupture ranged from 2.5 to 11%. Gunn and Mishell² reported on 1884 consecutive cases of premature rupture. In their study, the mortality was 100% for infants weighing less than 1000 grams, 15.1% for those between 1000 grams and 2500 grams, and 0.8% for those whose birthweight was greater than 2500 grams.

The same study also showed that the length of the latent period affected the perinatal mortality rate. For those infants who weighed 1000 to 2500 grams, the perinatal mortality rate increased from 10.2% to 22.5% when the latent period extended beyond 24 hours. The mortality rate of infants weighing more than 2500 grams increased from 0.5% to 2% when the latent period exceeded 24 hours.

The incidence of amnionitis varies with the population being observed, but is dependent upon the length of the latent period. Bryans⁸ studied a population that consisted primarily of poor blacks, and was able to show that the incidence of amnionitis was 6.4% if the latent period was less than 24 hours, and 30.7% if it was greater than 24 hours.

Other complications of premature rupture of the membranes include a higher incidence of breech presentation and cord prolapse. The incidence of breech presentation may be as high as 20%² in those infants that weigh less than 2500 grams. Cord prolapse may occur in 2-3%² of infants less than 2500 grams, probably because of the increased incidence of abnormal presentation. The increased mortality and morbidity among premature infants delivered vaginally from a breech presentation, compared to those of gestational age with vertex presentation, is well known.

When a patient reports loss of fluid at any time in pregnancy, she should be examined carefully and expeditiously in an attempt to confirm the diagnosis. The patient should be examined with a

a sterile speculum in an attempt to visualize the cervix and determine if there is a free flow of fluid from the os. At the same time, the fluid in the vaginal pool can be tested with nitrazine paper to determine pH. A sample of the fluid may also be taken and examined for the presence of fetal squamous cells and lanugo. The usual vaginal pH of the pregnant woman is 4.5 to 5.5. The pH of amniotic fluid is 7.0 to 7.5. Invalid results can be obtained if the nitrazine paper touches the cervical mucus, or if it contacts urine, blood, or basic antiseptic solutions. The best information is obtained by sampling pooled secretions in the posterior fornix without touching the cervix.

The amniotic fluid may also be dried on a glass slide and examined under a microscope for ferning patterns. Ferning is caused by the relative concentration of sodium and protein in the amniotic fluid, and does not occur in vaginal secretions.⁹

Ultrasonic examination may give an evaluation of the relative amount of fluid present. If there is only a small amount of fluid present, ultrasound may help to localize a small pocket of fluid for sampling by amniocentesis. If fluid is obtained, the presence of white blood cells and bacteria confirms the diagnosis of ruptured membranes.

The patient should not be examined vaginally or rectally during the latent phase. The examination does not provide significant information, but it may be a significant factor in the early onset of amnionitis.

Other controversial issues involve the use of prophylactic treatment with antibiotics and glucocorticoids. Burchell¹⁰ reported a decreased perinatal mortality rate by using prophylactic antibiotics. Leberherz¹¹ performed a prospective double blind study which demonstrated that prophylactic antibiotics did not alter the perinatal mortality, regardless of the duration of the latent period or the gestational age. The prophylactic use of antibiotics may also invalidate cultures taken from the neonate and cause some delay in the institution of appropriate antibiotic therapy when it is indicated. The recommendation, therefore, is that antibiotics not be used, unless there is evidence of amnionitis and delivery is not anticipated for several hours. Even then, antibiotics should not be given until appropriate aerobic and anaerobic cultures have been taken.

The usefulness of glucocorticoid therapy for the prevention of respiratory distress syndrome in certain infants was demonstrated by Liggins and Howie.¹² They showed a significant reduction in the incidence and severity of RDS when Betamethasone was given to the mother at least 24 hours prior to

delivery. This beneficial effect was limited to those infants whose gestational age was 28-32 weeks. If glucocorticoids are used, a protocol should be followed consistently. Liggins and Howie gave a mixture of 6 mg Bethamethasone acetate and 6 mg Betamethasone phosphate intramuscularly every 24 hours for two doses. They also recommended that the use of glucocorticoids be limited to those in whom a beneficial effect is demonstrated. The long term effects of the glucocorticoids on the fetus have not been adequately studied. On this basis, some have objected to their use.

Whenever a patient presents with a history consistent with ruptured membranes, she should be thoroughly evaluated and a plan of management begun, depending upon the gestational age. It is also advisable to discuss the possibility of premature rupture of the membranes with each prenatal patient and to make sure that they know to report it as soon as it occurs, since the duration of the latent period can be very important.

If membrane rupture occurs after 36 weeks, delivery should occur promptly. If labor does not begin within twelve hours, an induction should be begun. The mother should be observed for signs of sepsis and the fetus should be monitored with external monitoring equipment until induction is begun, or labor started spontaneously. Evidence of fetal distress or maternal sepsis will alter the approach to delivery.

A special exception to this treatment plan occurs if the mother has, or has had, a recent known vaginal infection with herpes. In this case, delivery by cesarean section is recommended within four hours of membrane rupture in an attempt to prevent the serious effects of neonatal herpes infection.

If the gestational age is 33 to 36 weeks, and there is no sign of maternal sepsis, there is evidence to show that delaying delivery until at least 16 hours after membrane rupture has a beneficial effect on the pulmonary maturity of the infant.⁵ After 16 hours, labor may be induced or permitted to continue spontaneously. This time schedule is followed in an attempt to balance the positive effect of membrane rupture on pulmonary maturity and the potential danger of amnionitis that occurs with prolonged rupture.

At gestational ages less than 33 weeks, two courses of action may be considered. Ideally, delivery would be delayed until pulmonary maturity is safely attained. This may be accomplished by observation and labor suppression until a gestational age of 33 weeks is reached, or signs of amnionitis occur. When the patient reaches 33 weeks, labor

is induced. A second course would be to stimulate pulmonary maturation with glucocorticoids, then observe the patient. If the latter course is chosen, the patient should be carefully selected and a protocol, such as that of Liggins and Howie, followed. Careful, long term follow up should be planned.

If the patient with membrane rupture at less than 33 weeks is managed by observation, she should have her temperature taken and recorded every four hours, and complete blood counts performed daily. If the loss of fluid ceases, the patient shows no sign of sepsis, and is reliable, management at home may be considered. If she is to be managed in this way, she should be instructed to take her temperature every six hours and to have a CBC three times weekly. She should also be instructed not to use a douche, have intercourse, or use a tampon, all of which may introduce infection.

If signs of sepsis occur in any of these groups of patients, the plan uniformly becomes expeditious delivery. The patient should then be examined vaginally to determine the condition of the cervix and estimate how long it will be until delivery occurs. Delivery should occur within 8 hours. If delivery is not expected for several hours, cultures should be taken and antibiotics begun. If delivery is imminent, antibiotics should be withheld so that the neonate can be cultured prior to the institution of antibiotic therapy. Cesarean section should be performed for evidence of fetal distress or if vaginal delivery is not accomplished within or near the 8 hour interval. If time permits, the mother should be transported, with the fetus in utero, to a perinatal center where she can be managed by specially trained personnel, and where there is an intensive care nursery to handle the difficult problems that frequently occur in the premature infant.

Conclusion:

Premature rupture of the membranes can present difficult therapeutic problems to the clinician. The patient must be carefully and promptly evaluated and an appropriate treatment plan begun. A plan of treatment, based on the gestational age of the fetus is suggested.

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President's Page

Today physicians are facing problems in their practices that they have never had to face before. Medical care used to be a private matter between the patient and his or her physician. This privacy has been eroded. Today in order to maintain a relationship with his or her patients, a physician is compelled to relate also to federal and state governments, to hospital governing boards and administrators, to insurance carriers, to his peers and to consumer groups.

In relating to these various entities, disagreements occur. We find that rules are being formulated, and rights (both ours and those of our patients) are being curtailed. As controls are applied, dissatisfaction rises and continued disagreement leads to unresolved problems.

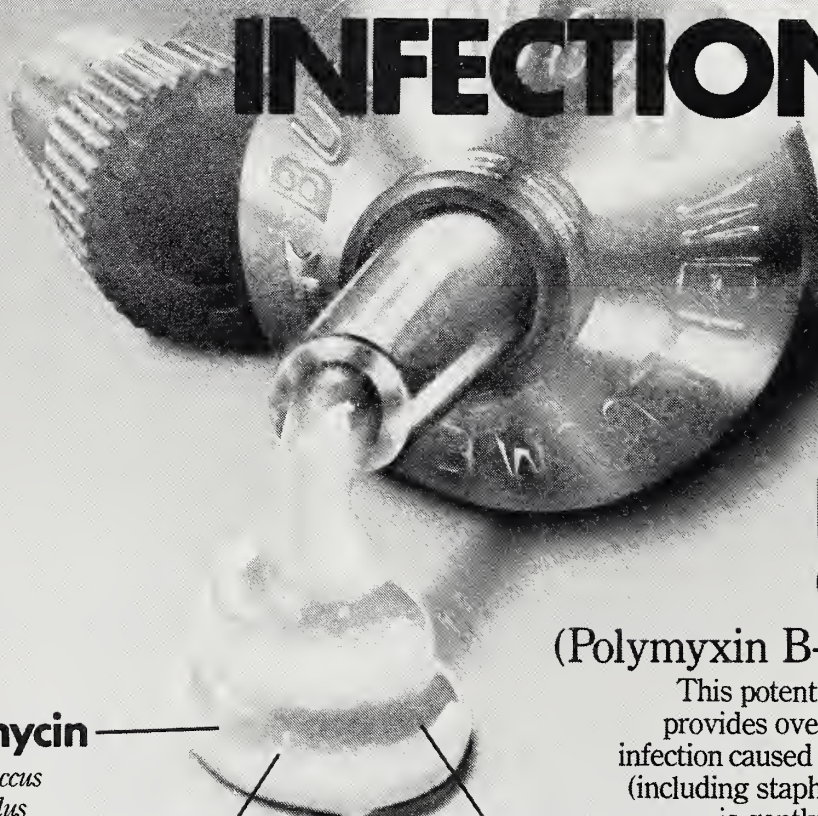
In a previous page I referred to the physician's traditional role as the citizen's advocate in medical affairs and urged each of you to continue to be that advocate. A significant part of such advocacy is negotiation, both direct and indirect, with third parties such as insurance carriers, government agencies, hospitals, etc.

Negotiating is a skill that can be learned. Each of us by the act of living has some degree of negotiating skill, but in our present world, with the level of expertise being brought to bear by our adversaries, this skill must be enhanced if we are to continue to be the successful advocates of high level or quality medical care. To this end the AMA has established a Department of Negotiations. The purpose of this department is two-fold: one, to directly assist medical organizations and individual physicians with active negotiation; and two, to educate physicians in the skills required to more effectively act in their own behalf in dealing with others in an adversary role.

Each year the AMA sponsors negotiations seminars throughout the country to inform physicians and to teach some of these skills. I had the privilege of attending one of these seminars in March of this year. It was well worth the time and effort, and I recommend it highly to each of you. Because of the thrust of third parties, the game has changed for us. We must recognize this and prepare ourselves accordingly. Improving negotiating skills is one way to help accomplish this. I urge each of you who can, to avail himself or herself of the opportunity offered by the AMA seminars. For specific information as to time and place, write to Department of Negotiations, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, 60610. You won't regret it.

Fraternally,
Russell H. Harris, M.D., President
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Complete literature available on request from Professional Services Dept. PML.

IATROGENIC CONGENITAL GOITER AND HYPOTHYROIDISM WITH RESPIRATORY DISTRESS IN A NEWBORN

A patient with congenital goiter and hypothyroidism due to maternal ingestion of iodide is reported. The patient also exhibited respiratory distress and cardiac failure in the neonatal period. The strong contraindication to iodide therapy in pregnant asthmatics and suggestions for alternate therapy in the respiratory distress in this neonate is discussed in light of recent evidence that a link exists between fetal thyroid function and pulmonary maturity in the newborn. Rapid correction of hypothyroidism in the newborn is stressed so that the complication of mental retardation might be avoided.

by

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INTRODUCTION

Maternal ingestion of iodides in pregnancy has been known to cause congenital goiter since the report by Parmelee¹ in 1940. In 1976, the American Academy of Pediatrics Committee on Drugs² recommended that iodides not be used in pregnancy because of many reports of congenital goiter and subsequent neonatal deaths related to "tracheal obstruction" from such goiters.

We are reporting a newborn with iodide induced goiter, re-emphasizing the danger of iodide ingestion in pregnancy and encouraging the use of alternate drug therapy for asthma in pregnancy. The cause and treatment of respiratory distress in congenital goiter-hypothyroidism will be discussed in light of recent information that a link may exist between thyroid maturity and pulmonary maturity in neonates. Prompt correction of hypothyroidism in an attempt to avoid residual mental retardation will also be stressed.

METHODS

Serum thyroxine (T₄) and thyroid stimulating hormone (TSH) were measured by radioimmunoassay (3,4).

CASE REPORT

A white female infant was delivered at 40 weeks

gestation by cesarean section because of breech presentation and poor progress of labor. Birth weight was 8 lbs. The infant had a symmetrical



Figure 1

Photo of patient demonstrating large goiter.

Supported by the National Foundation—March of Dimes Summer Science Research Programs for Medical Students.

bilateral swelling of the anterior neck and petechiae on the face and neck (Fig. 1). Because of labored respirations at birth she was suctioned, intubated transiently and given O₂. There was persisting palor and the infant was re-intubated oral-tracheally at eight hours with some improvement. She was transferred to the Intensive Care Nursery at Sioux Valley Hospital where physical examination revealed a rectal temperature of 98°F., pulse 168/min., blood pressure of 118/74 mmHg, slight edema and absent

deep Moro, suck and grasp reflexes.

This infant's mother was a 23 year old white primigravida. Because of asthma she had been taking a half tablet of Quadrinal™ daily throughout the pregnancy. Each half tablet contains: ephedrine hydrochloride 12 mg., phenobarbital 12 mg., theophylline calcium salicylate 65 mg. and potassium iodide 160 mg.

Technetium scan of the infant's neck revealed a massively enlarged thyroid. At 21 hours of age serum T4 and TSH were diagnostic of hypothyroidism with compensatory elevation of TSH. Blood gases reflected pulmonary insufficiency (see Table I). Chest x-ray at 24 hours showed cardiomegaly (see Fig. 2) and electrocardiogram, combined ventricular hypertrophy.

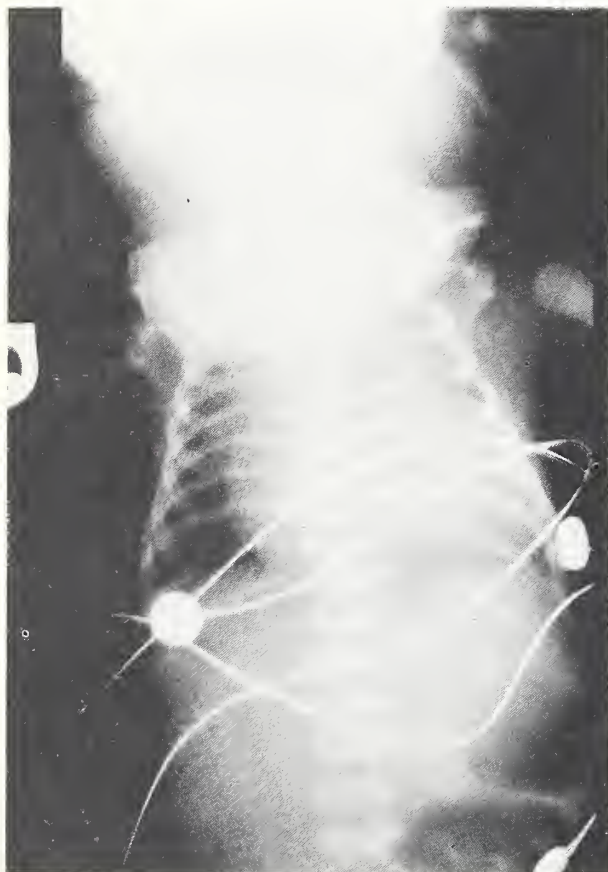


Figure 2a

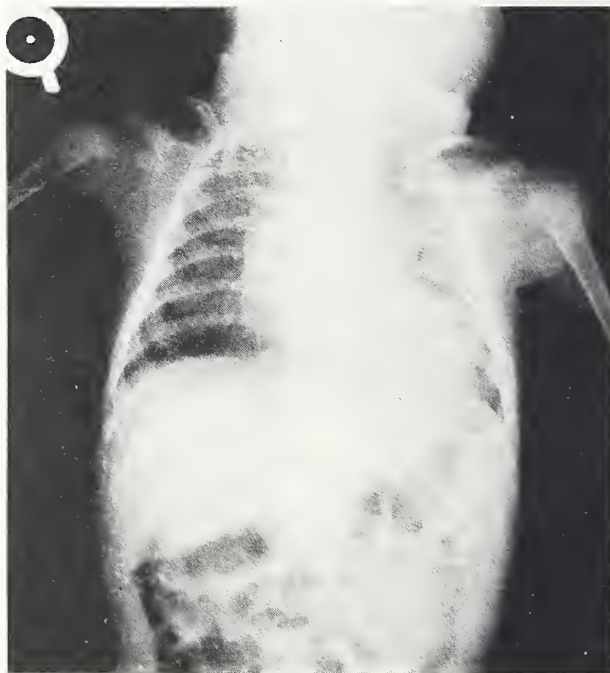


Figure 2b

(a) Chest x-rays of patient showing the cardiac enlargement at 24 hours after birth, (b) and its subsequent resolution to normal at 3 weeks of age. Note also the large soft tissue mass in the patient's neck.

TABLE I

Pertinent laboratory data of patient

AGE	microgm/dl Total T4	microU/ml TSH	pH*	mmHg* pCO ₂	mmHg* pO ₂	Adminis- tered O ₂ (via O.T. tube)
24 hrs	1.1	140	7.30	41	37	40%
26 hrs	Surgical lysis of thyroid. Initiation of T4,T3 replacement					
2 days	—	—	7.25	44	30	23%
8 days	1.0	35	7.38	46	43	25%
16 days	7.2	3	7.31	51	56	Room air without O.T. tube
25 days	8.6	—	—	—	—	

* Blood gases by heel stick

TABLE II
Full term neonate laboratory normals

TIME AFTER BIRTH	Serum total T4 ²³ microgm/dl		Serum TSH ²⁴ microU/ml		pH ²⁵	pCO ₂ ²⁵ mmHg	pO ₂ ²⁵ mmHg
	mean	range	mean	range			
24 hours	16.0	—	17.1	8.6-33.0	7.27-7.47	35-45	75-100
48 hours	15.3	—	12.8	5.0-23.0	"	"	"
5 days	12.5	—	—	—	"	"	"

Respiratory difficulty continued, manifested initially by decreased respiratory rate and later by tachypnea, cyanosis and apneic episodes. Under the assumption that the respiratory difficulty was secondary to the goiter, the thyroid isthmus was removed at 36 hours of age. Microscopic examination revealed a diffuse thyroid hyperplasia. Oral thyroid replacement was started on the day of surgery at 3.7 mcg. of triiodothyronine three times a day.

For several days following the thyroid surgery, the infant continued to require intubation, ventilatory assistance and oxygen because of respiratory distress. By three weeks, chest x-ray and electrocardiogram were normal. Also at three weeks, respirations were normal, as was the neurologic examination.

The patient was discharged at four weeks taking triiodothyronine daily. A few days later she became clinically and chemically hyperthyroid. Thus we discontinued triiodothyronine.

Subsequently, the patient walked alone at one year, had a vocabulary of about twenty words at 18 months and spoke in short sentences at 20 months. A 5 cm. goiter was present at 20 months. She is taking no thyroid medicines.

DISCUSSION

We believe that this patient's goiter and hypothyroidism were due to the mother's iodide ingestion during pregnancy. This newborn and mother presented several problems in management and pathophysiology: mechanism of the goiter and hypothyroidism; optimum therapy for asthma during pregnancy; cause of the cardiomegaly in the immediate newborn period; mechanism and management of the respiratory distress in a newborn with a goiter; optimum management of hypothyroidism in the newborn and prognosis for newborns with goiter and hypothyroidism.

That maternal ingestion of iodides can cause congenital goiter is a well documented phenomenon.^{1,6,7,8} Carswell et al.⁶ reported congenital goiter developing in the child of a mother taking only 12.0 mg. of iodide daily during pregnancy.

It is known that iodides readily cross the placenta and that the usual recommended therapeutic dosage of iodide is often greater than the daily adult iodide requirement of 200 micrograms⁹. This can be a significant quantity in light of the daily dietary presence of 250-700 micrograms of iodide in the United States. The renal clearance of iodide has been shown to be fairly constant despite increased serum iodide. Thus the excess iodide must be metabolized by the thyroid.¹⁰

The precise mechanism by which iodides produce goiter in the fetus is not known. The fetal thyroid has the ability to concentrate iodide at 10 to 13 weeks and by 18 to 24 weeks gestation, rising levels of TSH triggers significant thyroid hormone release into fetal circulation¹¹. High concentrations of iodides delivered to the fetal thyroid suppress organization of iodide by the thyroid. The resulting decrease in serum T4 and T3 causes an increased release of TSH, resulting in thyroid hyperplasia. The result is goiter frequently accompanied by hypothyroidism. Some investigators believe these babies possess a genetic predisposition to goiter formation.^{12,13}

Iodides have been used for the treatment of asthma for many years despite any objective evidence that their beneficial effect outweighs their potential for toxic side effects. Falliers et al.⁵ in a 1966 double blind study, noted that the toxicity of iodides was significant, including goiter development, in 18 of 52 adolescents. Only 18% of the subjects showed significant improvement of their asthma symptoms as measured by dispensary visits, wheezing on auscultation and peak flow rates. Based on several reports of morbidity and mortality in the offspring of mothers taking iodides during pregnancy, the American Academy of Pediatrics Committee on Drugs recommended that iodides not be used in pregnancy.²

Treatment of asthma in pregnancy is a difficult problem, since many of the drugs available for treatment may have teratogenic potential. Theophylline and beclamethasone both have demonstrated teratogenic properties in rodents although no objective

data in humans are available^{14,15}. Metaproterenol and salbutamol have not yet demonstrated significant teratogenic potential and may prove to be relatively safe in the treatment of pregnant asthmatics. Alternate drug therapy with any of the above medications would seem to be safer than iodides in light of iodide's well documented goitrogenic properties in humans.

Our patient had some element of cardiac dysfunction at birth as evidenced by cardiomegaly on x-ray and combined ventricular hypertrophy on electrocardiogram. The return to normal by three weeks when the patient was euthyroid suggests a relationship to the thyroid status. We suspect that the heart failure was precipitated by myxedema cardiomyopathy and the pulmonary hypertension of neonatal hypoxia.

The most feared complication of congenital goiter is neonatal asphyxia, many cases of which are reported in the literature¹⁶. Classically, the problem is thought to be due to mechanical compression and obstruction of the trachea by the hyperplastic thyroid. Packard reinforced this concept¹⁶ and urged surgical removal of thyroid tissue, now considered to be the treatment of choice in the respiratory distress of congenital goiter. However, Packard did not present definitive data.

In our patient, lysing of the thyroid and removal of the isthmus did not, clinically or according to blood gas analysis, improve the child's respiratory function. We question that the respiratory distress in this patient was due to mechanical obstruction alone.

Hardwick¹⁷ also reported a full term newborn with respiratory distress, iatrogenic goiter and hypothyroidism whose respiratory distress did not abate following surgical removal of excess thyroid tissue. At post mortem Carswell confirmed hyaline membrane disease in a full term baby who had a goiter and respiratory distress⁶. Smith and his colleagues¹⁸ studied prospectively and retrospectively the symptoms of babies with congenital hypothyroidism associated with hypoplastic thyroids (no goiters). Many of these newborns experienced respiratory distress. Thus congenital hypothyroidism, with or without a goiter, predisposed to respiratory distress. Finally, animal studies suggest that production of surfactant is influenced by thyroid hormones and that a deficiency in thyroid hormone results in deficient surfactant production in the fetus^{19,20}.

Thus on a basis of clinical and experimental observations, we question that the respiratory distress of congenital goiter-hypothyroidism is due solely to obstruction of the trachea. Other factors are perhaps sometimes present: hyaline membrane disease

and/or heart failure.

The approach to correcting the respiratory distress in congenital goiter and hypothyroidism must be guided by clinical definition of the source of distress. Certainly mechanical obstruction does occur in some cases, but pulmonary immaturity may also occur. Case studies tend to support that a combination of the two can occur or either can be present without the other. If the placement of an oral tracheal airway or hyperextension of the neck relieves the distress, then mechanical obstruction is probably the source. If the distress continues unchanged by airway placement, pulmonary immaturity should be suspected and may indeed be "confirmed" by radiologic findings of hyaline membrane disease. Also, heart failure should be considered particularly if cardiomegaly is found.

Because of our patient's hypothyroidism, replacement therapy was prescribed. We chose triiodothyronine, a rapidly acting hormone, and continuously monitored cardiac rhythms. Earlier studies indicate that prompt return of the myxedematous to the euthyroid state is possible without arrhythmias²¹. Follow-up evaluation of our patient has revealed normal mental development to date, making us optimistic about her future intelligence. Although mental retardation occurs frequently following neonatal hypothyroidism, prompt treatment of her thyroid deficit may well have contributed to our patient's normal development. Recent studies indicate that prognosis for mental development is improved with prompt thyroid replacement in such patients²².

CONCLUSION

The teratogenic potential of iodides is well documented and it is this author's feeling that iodides have no place in the treatment of asthma in pregnancy, and alternate drug therapy is indicated. Because of the ubiquity of iodides in non-prescription and prescription medicine alike, the chances of a pregnant woman being exposed to pharmacologic doses of iodide is significant. Therefore, all iodide-containing medications should be clearly labelled as to their contraindications in pregnancy.

Another important point illustrated by this patient is the possibility that respiratory distress in congenital goiter/hypothyroidism can be caused by pulmonary immaturity and/or heart failure, as well as by tracheal obstruction. The relationship between thyroid function and pulmonary maturity is still not well defined, but current evidence suggests that a link does exist.

Further investigation is needed to define this relationship. Statistical information on respiratory dis-

tress and thyroid function is needed. Statistical evidence will increase as more physicians become aware of the thyroid-pulmonary interrelationships and examine thyroid function in the victims of respiratory distress syndrome. Experimental data is needed to define the biochemical relationship between thyroid maturity and pulmonary function.

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FIFTY-ONE YEAR OLD FARMER WITH SEVERE PAIN IN LEFT HIP OF THREE DAYS DURATION

E. T. Clark, M.D.*
D. W. Humphreys, M.D.**
Discussers

J. F. Barlow, M.D., FCAP**
Pathologist-Editor

Case No. 732-926

This 51-year-old farmer entered Sioux Valley Hospital with a chief complaint of severe pain in the left hip radiating down the left leg of three days duration and fever of two days duration.

The patient had been relatively well with only minor back complaints in the past. Three days prior to admission, he sat on a backless chair watching a softball game and that evening was awakened during the night with severe pain in the left buttock and left hip. The pain persisted and began to radiate down the posterior left thigh to the knee. The next morning, he was almost unable to bear weight on the extremity; and he began to note headache and fever. He was admitted to an outside hospital where the pain continued and fever between 102° and 103°F. was noted.

The patient had no symptoms of cough, chest pain, nausea, vomiting or gastrointestinal disturbance. There was no dysuria or back pain. There was very mild anorexia. The patient complained of no change in bowel habits and gave no other significant history of musculoskeletal complaints. Three weeks prior to the onset of the back pain, he had had a complete physical examination and was found to be perfectly normal. The patient had been known to have gout for three years and was on benemid therapy. The uric acid had been normal. Twenty-five years prior to admission he had had an infected finger, but gave no history of any other type of infection.

PHYSICAL EXAMINATION: Temperature 101.8°F, pulse 100/minute and regular, respirations 28/minute and regular, blood pressure 140 systolic, 80 diastolic, height 5 ft. 11 in., weight 200 lbs. The patient was a well nourished man in obvious distress complaining of pain in the left buttock and back. Pressure over the posterior thigh or buttock elicited exquisite tenderness along the course of the sciatic nerve. The hip joint itself was probably mobile but limited

by the pain in the back. Examination of the head and neck revealed no palpable adenopathy. The eyes, ears, nose and throat were unremarkable. The lungs were clear to auscultation and percussion. The heart was not enlarged and there were no abnormal sounds. The abdomen revealed no spasm, tenderness, palpable organs, or masses. Rectal examination was unremarkable. The prostate was flat and negative. Heavy percussion over the back elicited no tenderness except as described before. Reflexes were brisk and equal. The patient complained when the sciatic nerve was stretched. There were no abnormalities of any other joint.

LABORATORY DATA: Urinalysis yellow, clear, specific gravity 1.017, pH 5.0 1+ proteinuria, negative for glucose, ketone bodies, and hemoglobin; sediment 0-1 white cell per high power field and rare granular casts. Hemoglobin 14.6 gm/dl, red count 4.82 million/mm³, hematocrit 43 vol/dl, mean corpuscular hemoglobin 29 micromicrograms, mean corpuscular volume 87 cubic micra, mean corpuscular hemoglobin concentration 34%, total leukocyte count 15,600/mm³ with 69% polys, 4% neutrophilic bands, 25% lymphocytes with a few reactive forms and 2% monocytes. The red cells were normochromic, normocytic on smear and the platelets were normal in number and morphology. The zeta-crit was 71% (markedly elevated). Agglutinations for salmonella, brucella and tularemia were negative. Cold agglutinin titer was 1:16. Lactic dehydrogenase was 293 Int. units (normal up to 273 Int. units). Calcium was 7.8 mgs/dl (normal 8.4 - 10.7 mgs/dl) inorganic phosphorus 1.5 mgs/dl, (normal 2.1 - 4.5 mgs/dl) total protein was 6.0 gms/dl; alkaline phosphatase, aspartate aminotransferase (SGOT), total bilirubin, blood urea nitrogen, creatinine, uric acid and cholesterol were within normal limits. Blood glucose was 104 mgs/dl fasting. An intermediate strength Mantoux PPD (5 tuberculin units) was positive at 9 mm. of induration. Two blood cultures grew staphylococcus aureus resistant to penicillin and tetracycline but susceptible to vancomycin, cephalothin, chloromycetin, clindamycin, erythromycin, gentamicin, kanamycin and oxacillin. A radioisotope bone scan was read as within normal limits, but a second bone scan suggested increased uptake in the left sacroiliac joint region. A chest film showed slight degenerative changes in the lumbar spine, most evident about L2. X-rays of the left hip were negative. A tomogram of the lumbosacral region showed an area of radiolucency in the iliac bone.

DR. CLARK: In this case we are presented with a 51-year-old patient who had enjoyed good health until three days prior to admission. The only past illness mentioned is that of gout and this was in

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good control. At the onset of his illness, he began to experience the pain of what is commonly referred to as "sciatica" and his illness then followed an acute febrile course.

Sciatica is defined as a condition of pain in the area of the distribution of the sciatic nerve. This important nerve arises from the sacral plexus which is supplied by the 4th and 5th lumbar and the 1st, 2nd, and 3rd sacral nerves. These nerve roots form the sacral plexus within the pelvis. A variety of causes both intraspinal or intrapelvic may give rise to sciatica; and, as such, it seems reasonable that a differential diagnosis of the causes of sciatica should nicely cover the possible diagnoses in this case.

The causes of sciatica are many; however, several can be excluded immediately. The history itself would seem to rule against etiology such as fracture dislocation of lumbar vertebrae or post herpetic neuralgia. The febrile course and leukocytosis make unlikely a diagnosis of backward displacement of intervertebral disk, soft tissue fibrositis, fat herniation, or gluteal bursitis.

Ankylosing spondylitis may occasionally cause sciatica by involvement of lumbar vertebrae or the sacro-iliac joints. However, the onset of the disease is rather insidious and is seldom seen after the age of 30. Although the sedimentation rate is markedly elevated, the most characteristic feature is the ossification seen on x-ray of periarticular soft tissue and eventually the entire joint.

Ewing's sarcoma, although a tumor of bone, may significantly involve soft tissues. It may certainly present with fever, leukocytosis, and elevated sedimentation rate. The occurrence is usually limited to the younger age group of 4-25 years. The metaphysis of the long bones is the usual site of occurrence although the tumor can occur in other bones as well. Pain is a major symptom and may be worse at night. Anemia is common and the lactic dehydrogenase may or may not be elevated. Some feel an increased lactic dehydrogenase is consistent with a worse prognosis.

Classically this tumor has the so-called "onion peel" appearance on x-ray which represents periosteal new bone formation in multiple thin layers. However, this pattern is not found in more than half the cases. A diffuse rarefaction, as bone destruction proceeds, is a later finding. The marked fever and leukocytosis is thought to be secondary to the products of degeneration caused by the rapidly growing tumor outgrowing its blood supply. If this were the lesion responsible for this man's illness, it would not only be an unusual age setting, but it would be extremely difficult to explain the initial **negative** radioisotope bone scan.

Eosinophilic granuloma, more common in adults and older children may present with pain and swelling at the site of involvement. In patients over the age of 20, the lesions are found almost exclusively in the flat bones and radiographically appear as lytic lesions 1-4 cm in diameter. Other than mild fever, constitutional symptoms are rare.

Other bone neoplasms such as multiple myeloma, reticulum cell sarcoma, and metastatic tumor may all present with onset of pain and manifest lytic bone lesions. The presence of nonspecific findings such as weakness, anemia, elevated sedimentation rate, or unexplained infection may be the first clues to these neoplasms. However, the onset of the disease is usually insidious. One would certainly not expect to find a completely normal physical examination and laboratory studies just three weeks prior to the onset of symptoms. Absence of anemia, normal alkaline phosphatase, normal or low serum calcium⁺, coupled with an initial negative bone scan all rule against these neoplastic disorders.

Likewise, a benign rectal examination plus a normal serum acid phosphatase make prostatic carcinoma an unlikely cause.

Early in this patient's illness one might have entertained the possibility of rheumatic fever because of the arthralgia, fever, and elevated sedimentation rate. However, we have no evidence of a preceding streptococcal infection, and although we have three minor manifestations, there are no majors. The later findings of staphylococcal septicemia and iliac radiolucency, of course, negate this diagnosis.

This brings us finally to consideration of the infectious group of diseases. Although a pyogenic arthritis of the left hip may present in the manner that this patient did, there is no evidence of left hip involvement on physical examination, scan, or x-rays.

Acute pyogenic osteomyelitis is a rapidly destructive infection of bone, usually hematogenous in origin, and occurring most frequently in infants and children. It predominantly involves the metaphyseal region of the long bones; however, it may affect any bone in the body. Approximately 50 percent of patients will give a preceding history consistent with a furuncle or superficial staphylococcal infection.

Onset may begin as an acute illness with high fever, rapid pulse, and leukocytosis as high as 30,000/mm³. Pain at the site of involvement may become excruciating and the soft tissues about the site may become edematous and inflamed; tenderness is quite pronounced.

The most common offending organism is staphylococcus aureus and blood cultures drawn early in the course will be positive for this organism in 50-

60 percent of cases.

X-rays in the first week to 10 days are almost always negative and bone destruction is usually far advanced before it becomes radiologically evident. Bony rarefaction, local periosteal elevation and new bone formation can frequently be seen during the second week.

Isotope bone scanning is much more sensitive than x-rays and can give an earlier clue to bony involvement. Note that in this patient both the initial x-rays and bone scan were negative for lesions, whereas later bone scan localized isotope in the left sacro-iliac joint region. The tomogram then showed an area of radiolucency in the iliac bone.

In contrast to acute pyogenic osteomyelitis, tuberculous osteomyelitis tends to arise as an insidious, chronic infection. The degree of local and general reaction depends on the intensity of the infection and the defensive reaction. Bone involvement is always secondary to a tuberculous lesion elsewhere and like pyogenic osteomyelitis arrives there by the hematogenous route. Its site of involvement, however, is most frequently the vertebrae rather than the long bones.

There are actually two clinical types of tuberculous osteomyelitis: a more insidious granulomatous type and a more acute exudative type. Actually both types occur together, one predominating over the other.

In the granular type, the patient often has low grade fever, anorexia, weight loss, night sweats, tachycardia, and anemia. Slight pain, tenderness and stiffness occur early whereas actual limitation of passive and active motion occurs late.

In the exudative type the above course may be more accelerated and fever to 101°F may occur. The sedimentation rate is moderately elevated, a leukocytosis may be present and lymphocytes will often predominate. Osteoporosis surrounding an osteolytic focus is the first radiographic sign of active infection.

A final consideration of a diagnosis of pyogenic arthritis can be discarded because of the negative findings in the left hip. Neither the scan nor x-rays suggest primary involvement of the hip joint.

This patient clearly presents with all the evidence needed to make a diagnosis of osteomyelitis and we are given evidence of two possible offending organisms. Although a report of less than 10 mm induration from intermediate strength Mantoux test is usually regarded as doubtful positivity, it is known

that 15-30 percent of persons with active tuberculosis ill enough to be admitted to the hospital give false negative results.

It is not known what previous reactivity this patient had to the tuberculin test; but it can, at least, be said that, if we regard 9 mm as positive, then this patient harbors viable tubercle bacillus somewhere in his body. The dormancy or activity of the infection then remains to be determined by other diagnostic methods. There is no evidence of primary pulmonary infection in this patient by x-ray and absence of WBC's or RBC's on urinalysis certainly does not suggest renal involvement. The mild proteinuria seen on urinalysis, I think, can be simply attributed to the presence of febrile illness.

As I do not believe the radiolucent lesion represents tuberculous osteomyelitis, it seems reasonable to obtain multiple sputum samples from this patient for standard microscopy and culture. If these are negative, he could certainly be followed with repeat Mantoux and chest films in 3-4 months.

The abrupt onset of pain followed by acute febrile illness, elevated sedimentation rate and leukocytosis, the early negative isotope and x-ray studies which, when repeated, show site of involvement and the two positive blood cultures clinch a diagnosis of acute staphylococcal osteomyelitis.

One might suggest periosteal needle aspiration of the affected bone for culture; however, I am not sure that early in the course of this man's illness that the site was identifiable. After cultures were drawn, appropriate intravenous antibiotic therapy should be begun without delay and then modified as necessary according to the results of the culture and antimicrobial susceptibility tests.

DR. CLARK'S DIAGNOSIS
*Acute Staphylococcal Osteomyelitis
of Sacroiliac Joint*

*DR. L. HOGREFE: Dr. Barlow, in the first scan, was there a close-up view of the area of the sacroiliac joint?

DR. BARLOW: Here are the two bone scans performed. They were separated by six days. In retrospect, the first bone scan does show increased uptake in the left sacro-iliac joint, but it is somewhat obscured by a full bladder. The second bone scan shows a clear cut difference in concentration of radionuclide between the two joints (Fig. 1) with marked increased concentration on the left. The radionuclide used was 99 metastable technetium as methylene diphosphonate. I think it is important to note here that the bone scanning agents will concentrate in areas of increased vascularity such as

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Figure 1

Left sacro-iliac joint with increased uptake of ^{99m}Tc compared to right.

infection at a very early stage of the disease and are very useful in detecting early osteomyelitis. Since cases like this involving the sacro-iliac joint or cases involving the vertebral column are becoming more frequent, I feel that the bone scan is a particularly useful technique in this regard. Fortunately, the clinician in this case, Dr. Jones, had the good sense to order a second bone scan even though the first one was read as normal.

Subsequently, at operation the diagnosis of staphylococcal osteomyelitis was documented by culture from the sacro-iliac region. Microscopic examination show an active inflammation in the curetted material.

***DR. WARREN JONES:** This patient presented with classical sciatica but became febrile. The fever was our clue that the patient had sepsis. Subsequently, the patient had an incision and drainage of the left sacro-iliac joint. *Staphylococcus coagulase* positive was grown from the joint. The wound was also irrigated with an antimicrobial agent.

DR. HUMPHREYS: What agent was used in the irrigation?

DR. BARLOW: The operative note says 1 gm. of Cefazolin in 1,000 cc of saline.

DR. JONES: This was continued for several days until the irrigating apparatus plugged.

FINAL ANATOMIC DIAGNOSIS

Staphylococcal osteomyelitis of left sacro-iliac joint

DR. HUMPHREYS: Dr. Clark has summarized the differential diagnosis excellently and had led us to

focus now on the subject of staphylococcal osteomyelitis.

For unknown reasons bacterial osteomyelitis is more common in men than women by a ratio of about seven to three. An apparent explanation for this increased incidence in men is the fact that a history of trauma precedes the onset of osteomyelitis in about a third of the patients presenting with this illness. This patient indicated that he sat on a "backless chair" several hours while watching a softball game suggesting a relationship between the osteomyelitis and trauma. Conditions other than trauma which predispose a person to osteomyelitis are metabolic disorders such as diabetes mellitus, immunosuppression, genito-urinary tract infections (because of the continuity of the vascular plexus with the sacral area); malignant neoplasms, and youth. The anatomic arrangement of blood supply appears to be the critical factor in young persons.

Bacterial osteomyelitis usually involves only one bone with the lower extremities being affected more often. The long bones are the most often involved; experts have suggested that this is due to the anatomy of the blood supply to these bones which allows stasis of blood, and an opportunity for organisms to proliferate and involve the bony structures.

Staphylococcal osteomyelitis usually develops through two routes: hematogenous "seeding" or direct extension. Bone is susceptible to chronic infection because the periosteum and cortex do not allow for the increased pressures associated with the inflammatory process. The increased pressure compromises the blood supply producing avascularity. There is also a reduction in the number of white blood cells due to the impairment of blood supply. Consequently, necrosis develops and eventually a "sequestrum" which is usually associated with an abscess in the bone is formed. The infection may lift the periosteum and involve soft tissue and joint spaces; it may also become the source of bacteremia. The patient will usually note pain in the bone often unremitting and severe. Surgical intervention is often the treatment of choice to relieve the pressure and remove the sequestrum. This is always done in conjunction with intravenous antibiotics.

It is not uncommon for a joint adjacent to an infected bone to develop a sterile effusion. This is referred to as "pseudoarthritis". Direct extension into the joint space is unusual. It is necessary to evaluate the synovial fluid by gram-stain and culture to separate actual infection from sterile effusion.

Diagnosing osteomyelitis has been facilitated by the new techniques of bone scanning using technetium 99. This method localizes the infection early;

*Specialist in Internal Medicine, Sioux Valley Hospital, Sioux Falls, SD and Clinical Associate Professor of Medicine, School of Medicine, University of South Dakota.

whereas with standard x-rays, two or three weeks may elapse before any abnormalities become visible. Aspiration of the suspicious area may be necessary. Biopsy, incision and drainage or more extensive procedures may also be indicated.

With regard to treatment, it is very important that these patients be treated early and adequately with antibiotics and possibly undergo surgery if necessary to prevent chronic osteomyelitis. The latter is a very difficult disease to cure. The antibiotic of choice for staphylococcal osteomyelitis should be a penicillinase-resistant drug such as one of the semi-synthetic penicillins or cephalosporins. If the cultures show the organisms to be susceptible to penicillin, some authors have advocated using high-dosage penicillin; however, others have indicated reservation with the use of penicillin because of the danger of selection of penicillin-resistant organisms in the process of treatment. The synergism of gentamicin and a penicillinase-resistant drug has been suggested as a way to prevent resistant staphylococcal strains from emerging. Oxacillin or nafcillin have begun to replace methicillin because they are less likely to cause a rare complication, interstitial nephritis. Cephalosporins are suitable alternatives. Bacteriostatic drugs such as clindamycin or erythromycin have been used effectively alone or in combination with bacteriocidal drugs; however, one must always remember that bacteriostatic agents require an intact immune system to be effective. The duration of treatment for acute osteomyelitis is usually six weeks; the intravenous methods of administration of the drug should be used to assure adequate levels of antibiotics in the bones. Although it is non-specific, the sedimentation rate has been employed in monitoring the response to therapeutic measures.

In chronic osteomyelitis, resection or saucerization of the area with secondary healing by granulation tissue may be necessary. Sinus tracts or scar tissue must be removed. Metal plates or nails and foreign bodies should also be removed during the initial phase of therapy. The patient is then treated intensively with antibiotics. If a prosthetic device is needed, this can be placed at a later phase while antibiotics are continued. The process of continuous irrigation of open bony areas with antibiotics or detergents is still controversial. The duration of treatment of chronic osteomyelitis is months or years. Among the many theories why chronic osteomyelitis is so difficult to treat is the concept of

"L-form" infection. As you know, these are cell-wall deficient bacteria, induced by bacteriocidal antibiotics, and are considered to be very difficult to eradicate. This interesting topic is still open to further study.

I will now describe a serologic procedure useful in diagnosis and management of staphylococcal disease. This test utilizes the Ouchterlony plate, which is an agar plate with a central well surrounded by peripheral wells. Serum from the patient is placed in the peripheral wells in varying dilutions. The central well contains an extract or sonicate of antigens from the staphylococcal cell wall. If an antibody to the staphylococcal extract is present in the serum, a precipitin line will develop between the peripheral and the central wells. By this method, one can obtain the titer of antibody in the patient's serum. This test is useful for detecting antibodies to organisms such as staphylococcus or pseudomonas; but is less useful in detecting antibodies from other bacteria such as enterobacteriaceae because the latter organisms share common antigens and give less specific results. If antibodies to staphylococcal antigens are found in the patient's sera, it would indicate that an active infection is present or that a recent infection has occurred somewhere within the last 60 days. Serial titers are also helpful to note the direction of changes giving some indication of an advancing or declining phase. This information in conjunction with the other clinical data can be of assistance in determining therapy. These tests are relatively easy to set-up in the laboratory, and would be useful in the diagnosis of staphylococcal infections.

I hope this information will be helpful to you. Are there any questions?

***DR. D. FOSTER:** Drug detail men have often suggested that the cephalosporins are more effective than the semisynthetic penicillins in treating staphylococcal disease.

DR. HUMPHREYS: Cephalosporins are very good drugs and could be considered; however, they are more expensive and have a broader spectrum. Generally, one prefers to use a single drug with a narrow spectrum to treat a specific organism in an attempt to reduce emergence of resistant organisms.

****DR. STASSEN:** How long does one follow patients with osteomyelitis?

DR. HUMPHREYS: That depends on whether the disease is acute or chronic. Patients with acute osteomyelitis should be followed for a year, and they should be instructed to return if symptoms recur. Once a patient has chronic osteomyelitis, he probably has it the rest of his life unless the bone

* Resident in Family and Community Medicine, Sioux Falls, SD.
**Resident in Family and Community Medicine, Sioux Falls, SD.

has been surgically removed. Therefore, recognition of the symptoms in the patient is more important in follow-up than a compulsory schedule of return visits.

Patients have reported an original osteomyelitis at a young age with recurrence many years later.

DR. FOSTER: In children, do you have to use therapy for a longer time?

DR. HUMPHREYS: Not to my knowledge. Acute osteomyelitis in children can be treated for six weeks quite effectively if diagnosed early. In children the growth centers of the bone may be affected. The growth of that particular bone may be impaired.

*DR. C. SULLIVAN: What is the minimum length of treatment for antibiotics in a child under 16 years?

DR. HUMPHREYS: Six weeks would be the minimal length of time.

DR. SULLIVAN: Can that be broken down between oral and intravenous?

DR. HUMPHREYS: Intravenous routes are preferable because of the need to maintain adequate drug levels.

**DR. RICHARD A. JAQUA: Dr. Humphreys, you mentioned the ouchterlony tests. Has this been done with candida?

DR. HUMPHREYS: Yes, similar work has been done in this area. The titers have been most useful when obtained serially.

DR. JAQUA: What methods have been used? Have they been immunofluorescent or have they used the precipitin test?

DR. HUMPHREYS: The current methods being used are ones that detect agglutinating antibodies; also double-immunodiffusion and crossed-immuno-electrophoresis have been used. These methods are still being compared for specificity and sensitivity.

* Resident in Family and Community Medicine, Sioux Falls, SD.

**Chairman of Department of Laboratory Medicine, School of Medicine, The University of South Dakota; Pathologist, Sioux Valley Hospital and Laboratory of Clinical Medicine, Sioux Falls, SD.

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The Board of Directors of the Aberdeen Area Child Protection Team elected **Charles Pelton, M.D.** to serve as president. **Juan Chavier, M.D.** was elected to the Board representing the medical community.

* * * *

Charles Pelton, M.D., Aberdeen, published a book entitled, "Doctor, My Bill Is Too High". The book, directed to the consumer, discusses change in medical care and change in people.

* * * *

Maynard Seaman, M.D., a former Onida area physician, departed with his family on their fourth five-year tour as medical missionaries in Nepal.

* * * *

The Rapid City Medical Center announced the association of **John R. Bedingfield, M.D.**, a diplomat of the American Board of Surgery, in the practice of general, thoracic and peripheral vascular surgery. He is a graduate of the Medical University of South Carolina and completed his residency training at Wilford Hall Medical Center, Lackland Air Force Base, San Antonio, Texas. He served at Elmendorf Air Force Base Hospital, Anchorage, Alaska, prior to moving to South Dakota.

The Rapid City Medical Center has announced the association of **Jorge Sanmartin, M.D.** in the Department of Internal Medicine. Dr. Sanmartin is a graduate of Creighton University, Omaha, Nebraska, and served as assistant professor of medicine at the school's division of cardiology. He is a fellow of the American College of Physicians and was recently elected to fellowship in the American College of Cardiology.

* * * *

Barbara Spears, M.D., Pierre, was the medalist and champion in the Championship Flight of the Pierre Women's Golf Association Invitational tournament.

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The Golliher-Brown Clinic, Spearfish, announced the association of **Charles Barton, M.D.** in the family practice of medicine. Dr. Barton graduated from the University of Nebraska School of Medicine and served his residency at the U. of Nebraska Medical Clinic.

* * * *

Jay Bachmayer, M.D. has joined **Dr. William Taylor** and **Dr. Barry Welge** in the practice of medicine in Aberdeen. Dr. Bachmayer graduated from the University of South Dakota School of Medicine and received his M.D. degree from the University of Iowa Medical School. He served his internship and residency in internal medicine at the University of Nebraska.

* * * *

John J. Franckowiak, M.D., Brookings, died at age 53 following an extended illness. He was a graduate of Georgetown University Medical School, Washington, D.C., and was employed as student health physician at South Dakota State University at the time of his death. Dr. Franckowiak was a member of the Madison-Brookings District Medical Society and the South Dakota State Medical Association.

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Prolactin is a polypeptide hormone secreted by the anterior pituitary. Secretion is regulated in the hypothalamus by the production of a prolactin inhibitory substance and perhaps one or more stimulating substances.

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Unfortunately, there are a variety of causes of elevated prolactin levels. The most common of these are certain drugs, particularly the phenothiazines, and primary hypothyroidism.

There are a variety of other causes of elevated prolactin levels so that the usefulness of this screening test must be tempered through the use of other investigative procedures. The following are common causes of elevated prolactin levels; pregnancy, lactation, stress, inflammatory or neoplastic conditions of the hypothalamus such as sarcoidosis, craniopharyngioma, or meningioma; a variety of drugs including alpha methyl dopa, reserpine, procainamide and estrogens; and pituitary stalk section.

John F. Barlow, M.D.
Pathologist

Reference

Frantz AG: Prolactin. *New England Journal of Medicine*, Volume 298, Number 4, January 26, 1978.

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Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSEAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily one hour before meals, and in mid evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in midmorning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

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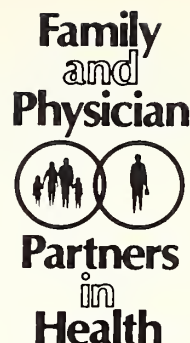
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SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105



SDAFP MEMORIAL LECTURE

The SDAFP Board of Directors, meeting during the 1978 Black Hills Summer Seminar, acted favorably upon a recommendation from the Education Committee and has sanctioned the development of an "SDAFP Memorial Lecture" to be given at each of the chapter sponsored Black Hills Seminars, beginning with the 1979 Black Hills Summer Seminar.

This lecture is to be given by an active, practice affiliate or resident affiliate member of SDAFP on a topic of the speaker's preference. Suggested topics are available from the Education Committee, based upon the cyclic core of knowledge for family practice.

Member applications for the privilege of being selected for this lecture must be available to the state office by April 1 of each year for the Summer Seminar and October 15 for the Winter Seminar. The application will be a letter of intent to be selected and an outline, with references, of the proposed lecture, including the title. The speaker selected for each of these lectures will be handled by the SDAFP Education Committee through a review process.

This memorial lecture, dedicated to former SDAFP members now deceased, will carry the honorarium award of \$200. Your participation is invited.

— — —

**THE AMERICAN ACADEMY OF
FAMILY PHYSICIANS**
1740 West 92nd Street
Kansas City, Missouri 64114

The American Academy of Family Physicians is the national association of family doctors. It is the second largest national medical organization, with 40,000 physician members in 50 states, D.C., Puerto Rico, and the Virgin Islands. Until October 3, 1971, it was known as the American Academy of General Practice. The name was changed in order to reflect more accurately the changing nature of primary health care.

The academy was founded in 1947 to promote and maintain high standards for family doctors providing continuing, comprehensive health care to the public. Other major purposes of the Academy include acknowledging and assuming responsible public advocacy in all health-related matters; preserving the right of free choice of physician to the patient; encouraging young people in preparing, qualify-

ing, and establishing themselves in family practice, and assisting in providing post graduate study courses for family physicians.

Realizing that the family doctor's effectiveness depends on sound, up-to-date continuing education, the founders wrote into the Bylaws the requirement that members must complete a minimum of 150 hours of approved continuing education every three years to retain membership.

This guarantee of competence is met through continuing education programs, publication or presentation of original scientific papers, medical school or postgraduate teaching, hospital residency training, etc. Accurate and current records are kept to insure that individual requirements are met; if they are not, the member is dropped from the rolls. The requirements, unique at time of origin, has through the years become a standard for an increasing number of other medical groups.

The Academy is governed by a Congress of Delegates composed of two delegates from each of the 54 constituent chapters as well as from resident and student groups. The Congress meets annually immediately prior to the Academy's Annual Scientific Assembly and has sole power to establish policies and define principles. These policies and programs are carried out between annual meetings by the Board of Directors and a number of standing and special commissions and committees. Delegates to the Congress elect the Board, which in turn appoints commission and committee members. Constituent chapters are similarly organized.

The Annual Scientific Assembly is the Academy's largest meeting for continuing education, drawing as many as 10,000 physicians and visitors.

The Academy was instrumental in the establishment of family practice, a derivative of classical general practice, as medicine's twentieth primary specialty. The AMA's Council on Medical Education and the independent American Board of Medical Specialties granted approval to a certifying board in family practice, the basic structural requisite of a medical specialty, on February 8, 1969. Examinations have been given annually since that year and there are now about 14,000 diplomates of the American Board of Family Practice. About 83 percent of these are Academy members.

The Academy maintains national headquarters in Kansas City, Mo. with a professional staff of 100 persons. It publishes a monthly scientific magazine entitled *American Family Physician*, with a primary care physician circulation of 120,000, and a monthly all-member news and features publication entitled *AAFP Reporter*. A home study, self assessment program is now available to members, produced by the AAFP Committee on CME.

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To: C. T. Hogg

To the High Mountains

I

To the high mountains I must go;
To see the sky at daylights glow;
To leave behind unfinished things;
To bring to mind forgotten springs.

II

To the high mountains I must go;
To see what waits unchanged for me;
To touch the earth that untouched be;
To look again at memory.

III

To bathe in icy flowing streams;
To conjure up some better dreams;
To graze with deer and talk with jays;
To purge my mind of modern days.

IV

To the high mountains I must go;
To leave before it's time to go;
To pick the trail untrod and worn;
To ponder grey-green moss and discarded horn.

V

To find myself in hemlocks hushed;
To taste red raspberries, faces flushed;
To fight the way through deadfall trees;
To share bee-made honey with angry bees.

VI

To the high mountains I must go;
To hear the eagle's soaring cry;
To see his faultless circles fly;
To serenely see this world through his eye.

VII

To feel the slowly dampening fog;
To smell the slow decay of mountain bog;
To be alone and warm in morning sun;
To be observed by the unseen One.

VIII

To the high mountains I must go;
To see the birth of mountain storms;
To shy as cataclysmic thunder forms;
To close my collar 'gainst wind and rain.

IX

To smell the ozone and rain-fresh air;
To mix it with the pine and laurel there;
To see the rainbow brighter grow;
To be seen and trusted by gentle doe.

X

To the high mountains I must go;
To walk softly on pine strewn floors;
To be not the intruder wildlife abhors;
To open all of natures doors.

XI

To fathom pain of bearing quill;
To save some misery as porcupine will;
To hear the chirp, the whistle and trill;
To warn of danger as the rock rabbit shrills.

XII

To the high mountains I must go;
To lengthen and deepen the breadth of my life;
To examine all purpose and thought in the strife;
To which we all are committed to strain;
To live our full lives in absence of pain.

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**Current Progress in Obstetrics
and Gynecology, Lecture #10—
Sequelae of Incomplete Gynecologic
Operations: IV. The Vagina**
Brooks Ranney, M.D.

9

**Clinicopathological Conference
Two Premature Neonates With
Respiratory Distress Syndrome**
*R. S. Wenger, M.D.
John Barlow, M.D.*

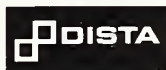
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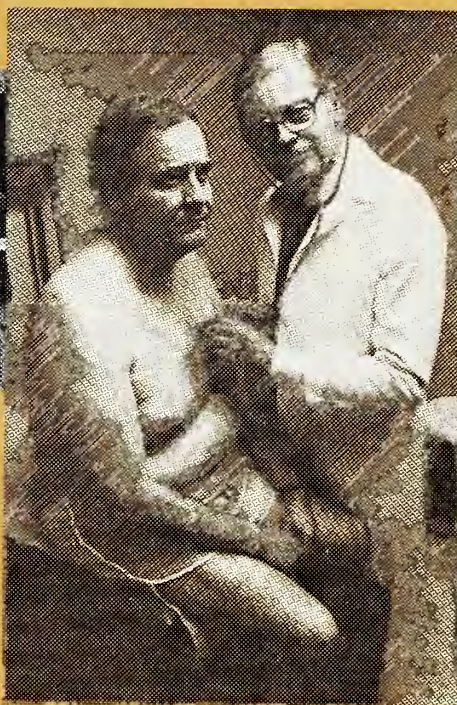
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Future Meetings

November

Postgraduate Conference on Obstetrics and Gynecology, U. of Iowa College of Medicine, Iowa City, IA, Nov. 28-29. Contact: Richard M. Caplan, M.D., Assoc. Dean for CME, U. of Iowa College of Medicine, Iowa City, IA 52242.

Diagnosis and Management of Arrhythmias, U. of Michigan Medical Center, Ann Arbor, MI, Nov. 28-30. Cat. I credits. Contact: Office of CME, Towsley Center for CME, U. of Mich. Med. School, Ann Arbor, MI 48109.

December

Update in Internal Medicine for Surgeons, Holiday Inn Downtown, St. Paul, MN, Dec. 1. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., Minneapolis, MN 55455.

Practical Ophthalmology in Primary Care, Sheraton-Ritz Hotel, Minneapolis, Dec. 1-2. Contact: Office of

CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Treatment of Family Sexual Abuse, U. of Minnesota, Minneapolis, Dec. 4-6. Fee: \$100. Contact: Office of CME, Box 293 Mayo Memorial Bldg., 420 Delaware St., SE, Minneapolis, MN 55455.

Prospective Rate Setting, MGM Grand Hotel, Las Vegas, NV, Dec. 4-6. Contact: Registrar, Aspen Systems Corp., 20010 Century Blvd., Germantown, MD 20767.

Emergencies in Internal Medicine, Bethesda Hospital, St. Paul, MN, Dec. 8. Contact: Dr. Frank Indihar, Bethesda Hospital, 559 Capitol Blvd., St. Paul, MN 55103.

Second Annual Birth Defects and Mental Retardation Symposium, Hilton Hotel, Salt Lake City, UT, Dec. 11-12. Contact: Robert M. Fineman, M.D., Dept. of Pediatrics, U. of Utah, 312 12th Ave., Salt Lake City, UT 84103.

Supercourse: 15th Annual Pulmonary Function in Health Disease Course, 11th Annual Respiratory Care

Course, 8th Annual Pediatric Pulmonary Care Course, Hyatt Regency Hotel, New Orleans, LA, Dec. 12-16. Fee: \$225. Contact: South Dakota Lung Association, 517 South Phillips Ave., Sioux Falls, SD 57102.

Physician Compensation and Contracting, Royal Orleans, New Orleans, LA, Dec. 13-15. Fee: \$335. Contact: Registrar, Aspen Systems Corp., 20010 Century Blvd., Germantown, MD 20767.

January

Rheumatology Conference, U. of Michigan Medical Center, Ann Arbor, MI, Jan. 18-20. Cat. I credits. Contact: Office of CME, Towsley Center for CME, U. of Mich. Med. School, Ann Arbor, MI 48109.

Pulmonary Medicine, Mayo Foundation Outreach Seminar, McKennan Hospital Aud., Sioux Falls, SD, Jan. 19-20. Cat. I AMA & AAFP prescribed credits. Contact: Sec., Medical Ed., McKennan Hospital, 800 E. 21st St., Sioux Falls, SD 57101.

(continued on page 8)

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†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:

King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

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Product Information as of October, 1976

(continued from page 3)


American Society of Clinical Pathologists & College of American Pathologists, Phoenix, AZ, Jan. 20-26. Contact: Ed. Center, American Society of Clinical Pathologists, 2100 W. Harrison St., Chicago, IL 60612.

Primary Care Geriatrics, Home study course from Georgia AFP, begins: April 16; enrollment deadline: Jan. 22. Fee: \$180 for AAFP members; \$210 for non-members. 30 AAFP prescribed hours. Contact: Camille Day, Ex. Dir., GAFF Ed. Foundation, 11 Corporate Sq., Suite 205, Atlanta, GA 30329.

Primary Care of the Newborn, Home study course from Georgia AFP, begins: April 16; enrollment deadline: Jan. 22. 30 AAFP prescribed hours. Contact: Camille Day, Ex. Dir., GAFF Ed. Foundation, 11 Corporate Sq., Suite 205, Atlanta, GA 30329.

Cardiology Today, U. of Iowa College of Medicine, Iowa City, IA, Jan. 22-25. Cat. I AMA credits. Contact: Office of CME, 285 Med Labs, U. of Iowa, Iowa City, IA 52242.

35th Annual Congress of American College of Allergists, San Francisco, CA, Jan. 27-31. Cat. I AMA credits. Contact: Frances P. White, Ex. Sec., American College of Allergists, 2141 14th St., Boulder, CO 80302.

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Lecture #10

SEQUELAE OF INCOMPLETE GYNECOLOGIC OPERATIONS: IV. THE VAGINA

by

Brooks Ranney, M.D.*

INTRODUCTION:

The supporting tissues of a woman's vagina and internal pelvic organs (the endopelvic fascia, and the cardinal, and uterosacral ligaments) are always stressed by the downward drag of gravity, when the body is vertical. Mid-positions or retroversions of the uterus may sag directly down the vaginal sleeve. Conversely, since the axis of an anteverted uterus is perpendicular to that of the vagina, an anterior uterus usually does not sag through the vagina quite so readily.

Vaginal relaxations and uterine prolapse may be aggravated (1) by the softening effects of pregnancy hormones, (2) by the tissue-distortion and tearing caused during childbirth, (3) by the repeated stretching of coitus, (4) by inherited tendencies, (5) by poor tissue nutrition, (6) by excessive obesity, or (7) by any increases in intra-abdominal pressure.

After the climacteric, decreasing estrogens result in notable thinning of pelvic tissues, so that prior pelvic relaxations may become much more symptomatic.

These diverse elements contribute to an infinite variety and size of vaginal and pelvic relaxations in women, so that the indicated timing, and exact methods of operative repair for any two women are never identical; rather, techniques must be individualized to use most effectively those distended and distorted pelvic connective tissues which remain in each patient.

However, experience has shown that several basic principles usually do apply to pelvic reconstructive operations:

(1) It is usually not wise to operate for the correction of mild, purely anatomic relaxations unless the patient also has disabling symptoms (such as urinary stress incontinence, difficulty passing firm bowel movements, "dragging-down" pain, uterine descensus, or decubitus ulcer of the cervix, etc.), because operative intervention to correct mild, symptomless, anatomic relaxations may actually result in the development of new, postoperative symptoms.

(2) So long as the patient is sexually active, the operator must constantly compromise the repair—trying to achieve necessary support and good bowel and bladder function, while at the same time trying to retain sufficient introital and vaginal space and flexibility for comfortable sexual function.

(3) If a uterus of any size, weight, or descensus is left in situ during and after vaginoplasty, it tends to sag down, distort, and break down the repair, particularly under the bladder, and near the culdesac. Likewise, a retained uterus or cervix may conceal latent neoplasia, nurture a subsequent pregnancy (which would weaken the vaginoplasty), or develop subsequent tumors or cancer. Therefore, in almost every instance, the uterus should be removed in association with vaginoplasty.

MATERIALS AND METHODS:

This is a study of 99 patients whose prior "incomplete" vaginal operations were performed in hospitals in South Dakota, Nebraska, Iowa, and Minnesota. Among these, 91 patients were first seen by us from 6 months to 30 years subsequent to their initial operations, because of continuing, recurring, or developing symptoms, which were incapacitating or potentially dangerous. Initial operations for the remaining 8 patients had been performed by the author. From 6 to 26 years later, each of these 8

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patients developed new symptoms which required second operations.

Punch cards, office records, operative reports and pathology reports for each of these 99 patients have been studied. Despite notable individual variability, these patients are best studied in three groups.

DATA AND EVALUATION:

1. Prior Vaginoplasty; Later, Needed Hysterectomy and Vaginoplasty:

Between the years 1930 - 1973, 22 patients had had some form of vaginoplasty, but **no hysterectomy**. Several had had two, separate vaginal operations. When questioned, the patients stated that prior procedures included dilatation and curettage—4, cervical amputation—9, uterine suspensions—5, anterior colpoplasty—16, posterior colpoperineoplasty—17, perineoplasty—4. At the time of initial vaginoplasty, ages ranged from 31 to 71; average, 40.32 years.

During a time interval of six months to 30 years, these 22 patients retained or developed the symptoms listed in Table I. Ten of these patients were seeking treatment for symptoms again within **6 months to 5 years** after initial operations. Most patients (86.4%) had complaints relating to pelvic relaxations. Additionally, in 8 patients (36.4%) the vaginal scars from prior operations were tight, rigid, and painful, particularly during coitus. Seven patients (31.8%) had abnormal bleeding from the cervix or uterus.

Table I

Subsequent Symptoms After Prior Vaginoplasty (No Hysterectomy) (22 Patients)

Dysfunction:	
Stress urinary incontinence	5
Difficulty passing bowels	5
Pain:	
Vaginal, dragging-down	11
Pelvic	8
Abdominal	4
Back	3
Painful vaginal scar	8
Dyspareunia	8
Dysmenorrhea	3
Bleeding:	
Hypermenorrhea	3
Spotting	4

Based upon these symptoms, upon abnormal pelvic findings, and upon indicated biopsy and curettage, definitive operations were recommended. Findings during examinations, operations, and

pathologic examinations of excised tissues are summarized in Table II. Significant sagging of the uterus was present in 12 patients (54.5%); these and others also had symptomatic vaginal relaxations. All 22 patients had fibroids, adenomyosis, or hypertrophy of the uterus or cervix. Neoplasia was present in 3 cervices, and in the endometrium of 6 other patients. One patient had adenocarcinoma of the endometrium, Stage I, a.

Necessary operative procedures for these patients have been listed in Table III. Ten patients had abnormalities which were best operated upon by the vaginal approach; 12, by abdominal approach. Additionally, efforts were made to widen the introitus and otherwise modify **painful**, rigid, vaginal scars for the **eight patients** who had complained of **dyspareunia** since their initial vaginoplasties. It was

Table II

Findings at Subsequent Operation After Prior Vaginoplasty (No Hysterectomy) (22 Patients)

Uterus:	
Descensus	9
Prolapse	1
Procidentia	2
Fibroids	9
Adenomyosis	8
Hypertrophy	6
Cystic hyperplasia	3
Adenomatous hyperplasia	2
Adenocarcinoma	1
Cervix:	
Cervicitis-hypertrophy	6
Dysplasia	3
Vagina:	
Cystocele	14
Enterocoele	10
Rectocele	8
Laceration perineum	3
Pelvis:	
Endometriosis	3

Table III

Operative Procedures at Subsequent Operations After Prior Vaginoplasty (No Hysterectomy) (22 Patients)

Vaginal:	
Vaginal hysterectomy	10
Anterior colpoplasty	10
Repair enterocoele	9
Posterior colpoperineoplasty	11
Abdominal:	
Abdominal total hysterectomy	12
Abdominal repair enterocoele	1
Anterior bladder-neck suspension	4
Ovarian function saved	8
Both ovaries removed	4

judged to be advisable to remove both ovaries in only 18% of these 22 patients.¹

Since the time of these definitive operations, 26 to 2 years ago, all 22 patients have been evaluated by periodic pelvic examinations. Two have died of other causes, 10 and 14 years after their operations, at ages 66 and 82. All patients have had good pelvic function and reasonable comfort. None has needed a further operation.

In four of these patients, we had performed the original anterior colpoplasty and posterior colpoperineoplasty. To put this into perspective, among 3,205 major gynecologic operations, between the years 1948 - 1977, 1,305 of our patients have needed some form of vaginoplasty—849 in association with vaginal hysterectomy, and 429 in association with abdominal total hysterectomy. Only 27 of these 1,305 patients (2%), who had tiny uteri with no descensus, have had diagnostic dilatation and curettage, to rule out present abnormalities of the endocervix or endometrium, followed immediately by vaginoplasty. Four of these 27 patients (about 15%) have required subsequent abdominal total hysterectomy. The indications for hysterectomy, occurring 6 to 13 years after dilatation and curettage, and vaginoplasty, were fibroids in one patient, adenomyosis in another, adenomatous hyperplasia of the endometrium in a third, and adenocarcinoma of the endometrium, Stage I, in the fourth patient. All are well now, 15 to 19 years after their second operations.

If the initial operation for all of these 22 women had been hysterectomy and careful vaginoplasty, probably none of them would have needed a second major gynecologic operation, for either a uterine or vaginal indication; and if indicated adnexal procedures (either conservative or extirpative) had been performed during the initial operation, the possibility that ovarian abnormalities might grow subsequently and require a second operation would be a little less than 1%.¹

2. Prior Vaginoplasty; Later Needed Another Vaginoplasty:

Between the years 1941 - 1975, 29 patients had had some form of vaginoplasty, with associated (or prior) hysterectomy. Four patients each had had two previous vaginoplasties, and one patient had had 3 prior vaginoplasties, performed within a span of 4 years! At the times of their prior vaginoplasties, the patients' ages ranged from 30 to 76 (average 50.8 years).

Most of these patients did not know the precise nature of their prior operative procedures. However, it was known that one patient had recently developed a symptomatic enterocele, 19 years after

prior anterior colpoplasty and posterior colpoperineoplasty. One patient had recently developed stress urinary incontinence due to cystourethrocele, 14 years after prior posterior colpoperineoplasty. Two patients had recently developed notable difficulty in passing bowel movements, caused by rectoceles, occurring 13 and 16 years after prior anterior colpoplasties.

However, the other 25 patients had retained or developed various symptomatic vaginal relaxations within six months to 5 years (average interval, 2.6 years) after their previous vaginoplasties, for which they sought gynecologic evaluation. In these patients it was evident from the vaginal scars that the **previous operative procedures had not addressed all of the problems** which were present in each patient; that is, in each patient, some relaxation(s) had not been repaired. Findings during examination and operation are listed in Table IV. Dyspareunia from posterior vaginal narrowing, due to rigid approximation of levator ani tissues between the vagina and rectum, was a major complaint of 9 patients (36%). Conversely, 2 other patients still retained old obstetric lacerations of the perineum, which had not been corrected at the original vaginoplasty.

Table IV
Findings at Subsequent Operations
After Prior Vaginoplasty, and Prior Hysterectomy
(25 Patients)

Vagina:	
Painful scar from prior plasty	9
Cystourethrocele	18
Enterocele	12
Rectocele	20
Old laceration of perineum	2

Table V
Operative Procedures at Subsequent Operations
After Prior Vaginoplasty, and Prior Hysterectomy
(29 Patients)

Vagina:	
Anterior Colpoplasty	18
Repair of Enterocele	12
Posterior Colpoperineoplasty	22

Needed operative procedures are listed in Table V. In each patient the procedures were individually adapted to that patient's needs and her anatomic distortions. Although we do choose anterior bladder-neck suspensions quite frequently for treatment of urinary stress incontinence, the problems of prolapse of the anterior vaginal wall were so obtrusive in 18 of these patients (72%) that we elected to correct

them with anterior colpoplasties. Twelve patients (48%) needed repair of prolapsing enteroceles. Posterior colpoperineoplasties for 22 patients (88%) included efforts to broaden the painful vaginal narrowing which had been caused during prior vaginoplasties.

Since the time of these vaginoplasties, 24 years to 1 year ago, 26 of these patients have been evaluated by periodic pelvic examinations until the end of this study, or until death. Four have died of other causes at ages 60, 64, 77, and 82. The remaining 3 patients were followed 3 to 5 years postoperatively. None of the 29 has needed a repeat vaginoplasty, and all have had reasonable function and comfort.

In some older women, vaginal relaxations can develop which were not present five years before. However, 25 of these 29 repeat vaginoplasties probably could have been avoided if all vaginal and pelvic relaxations had been carefully diagnosed and treated during initial vaginoplasties, and if no initial vaginoplasties had resulted in painful, rigid scar.

3. Prior Hysterectomy; Later Needed Vaginoplasty:

Between the years 1931 - 1972, 48 patients had had hysterectomies. According to patient histories, the indications for these original operations included those listed in Table VI. It is interesting that, although 10 patients knew they had uterine descensus and 11 others knew they had partial prolapse or procidentia, vaginal hysterectomy had been performed for only 8 of these 48 patients; 40 had had abdominal total hysterectomies. Among the 48 patients, 31 thought that they had some vaginal sagging before hysterectomy; 17 did not.

At the time of initial operation, these patients' ages ranged from 28 to 77 (average age, 48 years). During time intervals ranging from 6 months to 26 years (average, 12.3 years) these patients retained

or developed the various symptoms of vaginal sagging which are itemized in Table VII. All of these symptoms were caused by the respective vaginal relaxations which have been listed in Table VIII; relaxations involved the upper vagina in 75%; the anterior vaginal wall in 48%; the posterior vaginal wall in 79%, and the perineum in 33%. These symptomatic distortions of anatomy were corrected by the operative procedures noted in Table IX. Partial colpocleisis was utilized only for 8 elderly widows who had extensive vaginal prolapse; it does provide effective pelvic support which cannot be provided otherwise for some of these special patients.

Table VII
Subsequent Symptoms
After Prior Hysterectomy
(48 Patients)

"Dragging-down" vaginal pain	27
Difficulty passing bowels	24
Stress urinary incontinence	15
Dyspareunia	5
Spotting-bleeding (decubitus ulcer)	2

Table VIII
Subsequent Findings
After Prior Hysterectomy
(48 Patients)

Cystocele	25
Enterocele	23
Rectocele	38
Old Perineal Laceration	16
Prolapse of Vagina	8

Table IX
Operative Procedures at Subsequent Operations
After Prior Hysterectomy
(48 Patients)

Anterior Colpoplasty	23
Anterior Bladder-neck Suspension	2
Repair of Enterocele	23
Posterior Colpoperineoplasty	38
Partial Colpocleisis	8

Table VI

Known Indication for Initial Hysterectomy **(48 Patients)**

Uterus:

Fibroids	22
Adenomyosis	2
Hypertrophy	3
Cystic hyperplasia	1
Adenomatous hyperplasia	3
Adenocarcinoma	1

Cervix:

Descensus	10
Prolapse	10
Procidentia	1
Cervicitis-hypertrophy	2
Carcinoma, Stage I	1

Since their vaginoplasties, 44 of these patients have been followed by periodic pelvic examination for time intervals ranging from 24 to 2 years, until the end of this study, or until death. Nine of these 44 patients have died of other causes at ages ranging from 67 to 93 (average, 81.1 years). They lived an average of 13 years after their respective vaginoplasties. The remaining 4 patients were followed from 2 to 5 years postoperatively. None of these 48 patients has needed a repeat vaginoplasty.

It seems likely that about 31 of these 48 patients could have avoided a subsequent major gynecologic operation if pelvic and vaginal relaxations had been recognized and carefully corrected at the time of their initial operations.

COMMENTS:

A few of the many factors, which may cause a gynecologic patient to need later vaginoplasty, sometime after an initial gynecologic operation, may be discussed briefly, as follows:

(1) It is difficult to acquire and develop the arts and skills which are needed for careful examination and evaluation of vaginal relaxations. Even more difficult is the correlation of specific vaginal relaxations with the patient's various symptoms. Higher vaginal relaxations are increasingly more difficult to evaluate, so that high rectoceles or enteroceles² are easily missed. Symptoms from urethritis or cystitis may either mask or simulate symptoms caused by relaxations of the anterior vaginal wall. Large uterine or ovarian tumors can press down and cause concealed, upper vaginal relaxations, even in nulligravid patients. All these factors, and others, contribute toward incomplete identification of symptomatic pelvic relaxations.

(3) Techniques of vaginoplasty cannot be applied with cookbook precision. A thorough experience with, and working knowledge of the many obstetric distortions of gynecologic anatomy and physiology are most useful if one is to adapt vaginoplasty to the stretched and torn residues of pelvic supports in each individual patient. The experience a gynecologist acquires, while he observes postoperative healing, and while he evaluates the patient's report of returning bladder function, bowel function, sexual function, and pelvic comfort, all contribute immeasurably to modifications of technique which are used for later patients. Hematoma development in the incision will usually cause a poor long-term result, but one cannot specifically clamp and ligate each tiny arteriole in these highly vascular tissues; however, one must ligate larger bleeders, and use suturing methods which will control smaller oozers. It is important **not** to draw large masses of tissue together with sweeping sutures, nor to constrict the vagina too narrowly for coitus, because such techniques will produce painful vaginal scars. Thus, adaptable and meticulous techniques are essential to obtain good, long-term results.

(3) Sufficient time and care for postoperative healing are essential. Many a fine vaginoplasty has been ruined by postoperative infection, by rough nursing care, or by injudicious patient activities.

Since the vagina is always contaminated by microorganisms of bowel origin, the patient should receive antibiotics before, during, and after vaginoplasty. We still prefer to prescribe penicillin and streptomycin, unless individual allergies prevent their use; then we prescribe substitutes. Since partial urinary retention is the major cause of bladder infections in women, the bladder (1) should be drained continuously, at first; (2) should be drained thoroughly by intermittent catheterization for residual urine, when subsiding postoperative edema allows returning bladder function; (3) and should never contain more than 500 ml. at one time. Bowel movements should be soft enough to pass with ease. If used at all, enemas should be given gently. Blood supply in healing, atrophic vaginal tissues of postmenopausal patients may be improved by giving the patients oral estrogens, postoperatively. Intermittent use of a perineal heat lamp improves comfort and healing. Until the vaginal tissues of the postoperative patient have solidified firmly in place, the patient should remain horizontal most of the time. Effects of gravity, in the vertical position, lifting, straining-at-stool, etc. tend to break down the repair. Coitus is interdicted until the gynecologist has examined and assured the patient that healing is sufficient—usually two months or longer after operation. A few of our patients who have not followed this advice have had meticulous repairs stretched out by early coitus, and in four instances severe postcoital hemorrhage has required emergency return to the hospital for resuturing of the vagina. Thus, judicious postoperative care is of utmost importance toward obtaining excellent long-term results.

(4) Even after thorough healing, there are several factors which may gradually and adversely modify a carefully performed vaginoplasty; i.e. (a) repeated coital stretching, (b) thinning of vaginal tissues due to loss of estrogens after the climacteric, (c) the effect of gravity when a woman is vertical, (d) obesity, and (e) increased intra-abdominal pressure. When indicated, at least the vaginal thinning can be improved by inserting intravaginal estrogen cream about once a week.

SUMMARY:

The arts and skills involved in making accurate diagnoses, and properly treating, individually variable, and often multiple vaginal and pelvic relaxations are very complex and should be based upon broad obstetric-gynecologic training and experience. It is often possible to obtain good long-term results, but not without careful attention to many, variable anatomic, physiologic, environmental, and social influences, and not without meticulous individualized

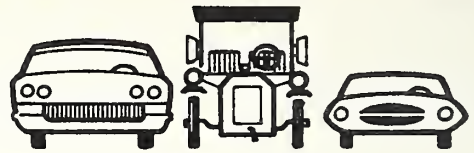
operations and thoughtful, long-term postoperative care.

ADDENDUM:

This is the fourth, and last, article in a series of reports in which sequellae of "incomplete gynecologic operations" have been studied. The first report dealt with results after operation on uterine tubes.³ The second described sequellae after "incomplete operations" on the uterus and cervix.⁴ The third reported the infrequent need for myomectomy, the subsequent reproductive function, and the need for later gynecologic operations.⁵

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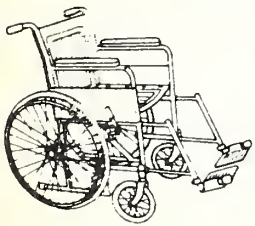
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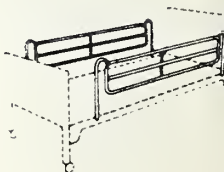
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President's Page

Who should practice medicine? Simple question. Simple answer? Not anymore. What constitutes the practice of medicine? Another simple answer? Maybe. In recent years we have seen the emergence of political considerations influencing the answers to these questions. Is this good for the people of our state and our country? Questionable.

We are seeing many non-physician groups of people involved in "health care" literally clamoring for an expanded role in "screening" the citizens of our state and in treating the ills or infirmities of these same citizens. Will this produce better "health care" for the people? Will the quality go up or even remain the same? What about the cost? If these groups of people, which are significant in number, are given this expanded role, will it be cheaper . . . or just add another layer of expense to what is perceived by many to be an already expensive proposition?

Would this expansion of the roles be reaching citizens who **lack** medical care . . . or merely provide a convenience? If a convenience, can the cost be justified? And what happens to quality when convenience is provided in this way? Won't this amount to second class care for the citizens of our state? Do the citizens of our state want second class care? I doubt it. Would they prefer physician supervision of these groups, thereby providing, instead of second class care, a second level of care? In some instances.

If the expanded role of some "health care" groups is a reality in our changing society, what can we as physicians do to protect the people of our state from "second class" care and promote "second level" care in those areas that need is perceived, be it convenience or otherwise?

There are two specific areas that come to mind. **FIRST:** We should make every effort to assure that those people delivering second level care are **properly** supervised by physicians. **SECOND:** Since those people would be "practicing medicine", albeit second level, their licensing and regulation should be under the aegis of the Board of Medical and Osteopathic Examiners.

Without these two safeguards, I fear that second **class** care, and not second **level** care, will emerge. The people of our state will be ill served if this should occur.

Medical care appropriately belongs under the direction of physicians. Anything less is a step backward.

Fraternally,
Russell H. Harris, M.D., President
South Dakota State Medical Association

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TWO PREMATURE NEONATES WITH RESPIRATORY DISTRESS SYNDROME

R.S. Wenger, M.D.*
Discusser

J. F. Barlow, M.D.**
Editor

Case 753884

This newborn male infant was born to a 23-year-old primigravida with an uneventful prenatal history. The estimated date of confinement was not known because the patient had been on clomiphene and the last period was hard to document. The estimated gestational age was 35 weeks. The patient had been on no other medications and there was no evidence of infection. There was an unremarkable labor and vaginal delivery. The Apgar score was 4 at 1 minute and 5 at 5 minutes. The patient had difficulty being stimulated to breathe. He responded to 40% oxygen in the isolette hut soon developed respiratory grunting and subcostal retraction with nasal flaring. He was transferred to Sioux Valley Hospital in the isolette with 40% oxygen. The color was good and the lungs sounded clear at first hut rales and rhonchi developed shortly. An intra-arterial catheter was placed. Immediate blood gases were pH 7.14, PCO₂ 76 Torr, PO₂ 45 Torr. Dextrostix blood sugar was between 25 and 45 mgs/dl. The membranes were ruptured just prior to delivery and external monitoring showed one dip of fetal heart tones to 100/min early in the second stage of labor.

PHYSICAL EXAMINATION: The baby appeared in mild respiratory distress. There was a good red reflex. Examination of the head, eyes, ears, nose and throat were unremarkable. The heart rate was regular; there were no murmurs. There was slight retraction in the chest and slight pectus excavatum and rales bilaterally. Examination of the abdomen was unremarkable. The patient was a normal male with the left testis high in the inguinal canal. There were good extremity pulses. The moro reflex was good and there was a normal grasp reflex. Suck reflex could not be elicited.

LABORATORY DATA: Hemoglobin 15.2 gms/dl, calcium 8.0 and 8.5 mgs/dl, blood sugar 270 mgs/dl, sodium 143 meq/L, potassium 4.8 meq/L, chloride 104 meq/L, blood gases at 02 rate 40-50% on first day, pH 7.29 to 7.34, PCO₂ 40 to 44 Torr, CO₂ content 21 to 23 mm/L, PO₂ 92 to 94 Torr, O₂ saturation 92 to 96%, base deficit -4 to -7. The following day multiple blood gas determinations with a PO₂ rate of approximately 40% and 5 mm PEEP, Ph 7.41 hut decreasing to 7.29, the PCO₂ 41 to 45 Torr, PO₂ dropped from 90 to 48 Torr hut fluctuated up to 70 with many results about 60 Torr. Bilirubin 3.8 mg/dl total, 3.4 mg/dl

indirect and 0.4 mg/dl direct. Hemoglobin on third day was 13.0 gm/dl, and blood gas determinations over the next two days showed pH ranging from 7.10 to 7.30 with most around 7.20, PCO₂ ranged from 40 to 50 Torr and PO₂ 50 to 60 Torr. Corrected white count 1420 with 21% neutrophils, 3% neutrophilic bands, 1% eosinophils, 75% lymphocytes 62 nucleated reds per 100 white cells. The red cells showed moderate anisocytosis and moderate polychromasia. The platelets appeared normal in number and morphology. The calcium dropped to 7.7 mgs/dl.

OTHER LABORATORY DATA: Serum osmolality 273 mosm/kgm (normal 270 to 300 mosm per kgm). Blood urea nitrogen 15 mg/dl, creatinine 1.5 mg/dl, blood sugar on the last hospital day was 15 mg/dl. A blood culture and nasopharyngeal culture grew out a large amount of Group B beta hemolytic streptococcus (GBBS). An electrocardiogram revealed a sinus tachycardia hut was within normal limits for an infant. Chest film showed peripheral granular infiltrates extending into both bases. The chest film was interpreted as probable respiratory distress syndrome (hyaline membrane disease).

The child died on the third hospital day in respiratory distress.

Case 752948

This two-pound female infant was transported after delivery at 28 weeks gestation to the Sioux Valley Hospital intensive care nursery.

The mother was an 18-year-old primigravida who had an uncomplicated pregnancy and was on no medication other than vitamins. There was no family history of unusual diseases. The baby was premature (25 weeks by date, hut estimated 28 weeks gestational age) and weighed two pounds after a spontaneous vaginal delivery with apgar score of 8 at one minute and 8 at five minutes. The baby was put on 30% oxygen and developed spontaneous breathing hut soon developed grunting respirations and retractions. The color remained good after the oxygen was increased to 70-80%.

PHYSICAL EXAMINATION: This revealed a baby with good color. Vital signs BP 40 by the flush technique, heart rate 160/minute, temperature 96°F on arrival increasing to 97°F. Examination of the head and neck revealed a red reflex and no other abnormalities. The chest showed moderate retractions with bilateral rales and rhonchi more marked on the left. The abdomen showed no palpable organs or masses. The examination of the extremities and neurologic examination revealed no abnormality. There were no sole creases present on the feet and the nails did not extend to the ends of the fingers.

LABORATORY DATA: Both the mother and baby were A Rho (D) positive. The direct antiglobulin test in the baby's red cells was negative.

* Resident in Family and Community Medicine, Sioux Falls, SD.

**Pathologist, Laboratory of Clinical Medicine and Sioux Valley Hospital; Professor of Pathology, School of Medicine, University of South Dakota.

Supported in part by Clinical Cancer Training Grant T12 CA 08032 from the National Cancer Institute of the National Institute of Health U.S. Public Health Service.

Time	pH	PCO ₂ (torr)	CO ₂ Content meq/L	(torr) PO ₂	O ₂ Sat. %	O ₂ rate	Base Deficit
Adm. 9:00 pm	7.31	34	18	76	95%	65%	- 8
10:40 pm	7.31	47	17	23	46%	65%	-12
11:15 pm	7.06	48	15	37	71%	80%	-16
12:15 am	7.18	32	13	69	94%	100%	-16
12:50 am	7.02	36	10	40	71%	90%	-20

sodium 131 meq/L, potassium 5.0 meq/L, chloride 110 meq/L, calcium 8.9 mgs/dl, hemoglobin 14.1 gm/dl.

Portable chest film showed the lungs were granular in appearance, but progressed to massive densities in both lungs with air bronchograms bilaterally. Later a large apparent tension pneumothorax developed on the right with very poor aeration. Cultures of the blood showed Group B beta hemolytic streptococcus (GBBHS). The child expired on the second hospital day.

DR. WENGER: To summarize, both protocols represent a similar type of problem—that is, respiratory difficulty in a neonate. In case 2, we are presented with a 28 week old infant, who was born with good apgar scores, but who soon developed grunting respiration and retractions requiring increasing amounts of oxygen. Chest x-ray demonstrated a granular appearance in both lungs which progressed to massive densities in both lungs with air bronchograms bilaterally. Later a large tension pneumothorax developed on the right with very poor aeration. Cultures of the blood yielded GBBHS. The patient died on the second hospital day. In case 1, we have a 35 week old infant who had poor apgar scores initially of 4 and 5 and developed grunting and retractions immediately. His chest x-ray showed perihilar granular infiltrates extending into both bases. This chest film was interpreted as probable respiratory distress syndrome (hyaline membrane disease). GBBHS was cultured from this patient's nasopharynx and blood stream. He died on his third hospital day.

To assume that every baby with grunting, tachypnea, and retractions has hyaline membrane disease can be a serious mistake because many cases with a similar picture are surgically or medically correctable. Hypoglycemia may present with tachypnea as can severe blood loss or polycythemia. It, therefore, follows that any infant with respiratory difficulties of this sort should have his blood glucose and hematocrit determined at once. In order to differentiate anatomic and infectious causes of respiratory disease from hyaline membrane disease, obtaining a chest x-ray early is mandatory. Conditions which can generally be diagnosed, or at least suspected, by obtaining chest x-rays include the following: diaphragmatic hernia, diaphragmatic eventration, diaphragmatic paralysis, pneumomediastinum, lobar emphysema, pulmonary cysts, and pulmonary tumors. The chest radiograph in aspiration syndrome, pulmonary hemorrhage, pneumonia and hyaline

membrane disease in neonates may at times exhibit a similar x-ray picture. A more complete list of causes of respiratory distress in the neonate which may resemble hyaline membrane disease are listed in Table 1.

Table 1

Entities Causing Respiratory Distress in the Neonatal Period and Often Confused With Hyaline Membrane Disease (Neonatal Atelectasis)

Congenital Anomalies—tracheoesophageal fistula, diaphragmatic hernia, diaphragmatic eventration, pulmonary agenesis or hypoplasia, infantile lobar emphysema, pulmonary cysts, cystic adenomatoid malformation of the lung, other intrathoracic cysts and tumors and pulmonary lymphangiectasia.

Aspiration syndromes involving meconium, amniotic fluid or vaginal contents

Infections—bacterial or viral pneumonias

Miscellaneous conditions—pulmonary hemorrhage, pneumothorax, pneumomediastinum, diaphragmatic paralysis, chylothorax, pleural effusion, transient tachypnea of the newborn.

History and other factors usually help to differentiate these entities along with the chest film. The importance of obtaining a good history cannot be overemphasized. Prolonged rupture of membranes, prolonged labor and fever in the mother suggest bacterial pneumonia and the presence of maternal polyhydramnias suggests tracheoesophageal fistula with esophageal atresia, other gastrointestinal obstructive problems or maternal diabetes.

First of all, I will discuss hyaline membrane disease itself. The infant with this disease is typically premature but otherwise appropriate for gestational age with a history of perinatal asphyxia. The patient usually develops respiratory difficulty immediately or within the first few hours of life with expiratory grunting, cyanosis, and a chest x-ray which has characteristic finely reticulo-granular opacifications of both lung fields with air bronchograms. Eighty-five to ninety percent of these patients survive. Fatal cases die at approximately three days and the remainder recover or improve between the third and fifth day. There are many theories relative to the pathogenesis of hyaline membrane disease and many factors are interrelated including hypoxia, acidosis, decreased surfactant, fibrin deposition, and

hypothermia. There are several principles of treatment for this disease. In terms of prevention, maternal hypoxia, hypotension, and decreased uterine blood flow should be corrected. Prompt resuscitation is indicated in those infants in need of respiratory assistance in the delivery room. Hypothermia in the infant should be avoided because chilling is known to increase pulmonary vasoconstriction and produce acidosis with hypoxia. The premature infant should not be denied his normal placental transfusion. Cord clamping can usually be delayed until the infant has taken several breaths. Adequate oxygenation and prompt correction of acidosis with sodium bicarbonate infusions promotes pulmonary vasodilation in affected infants. Shock should be treated immediately with blood transfusions. Finally, antibiotics should be given if there is any likelihood that infection is present.

Meconium aspiration is usually recognized by the picture of a meconium stained infant with low apgar scores. Of course, the larynx should be visualized immediately with a laryngoscope and any obstructing meconium should be suctioned. The clinical picture of an infant who has aspirated meconium is one of initial depression, labored respirations, and tachypnea. Chest x-rays show bilateral coarse infiltrates with areas of hyperaeration producing a honeycomb effect. Treatment is with oxygen and appropriate antibiotics—the latter to avoid possible pneumonitis.

The infant with pulmonary hemorrhage presents clinically like one with hyaline membrane disease showing tachypnea, retractions, and cyanosis. Bleeding from the upper airway is seen in approximately 50% of cases. Chest x-rays show nonspecific changes such as a reticulo granular appearance, nodular densities, and opacification. A normal appearing chest film has been described. The prognosis in these infants is extremely poor.

There are several other anatomic pulmonary congenital anomalies which produce respiratory distress. These include pulmonary agenesis or hypoplasia. Unilateral pulmonary agenesis occurs more frequently than bilateral and may be familial. There is usually marked deviation of the trachea as the mediastinal contents are displaced to the affected side. Pulmonary hypoplasia is often associated with other malformations; notably diaphragmatic hernia, renal agenesis (Potter's syndrome), and dwarfism.

Infantile lobar emphysema can produce respiratory distress at birth but usually infants develop respiratory distress following an infection at 1 to 2 months of age. They have retractions, cyanosis, and wheezing. Chest x-ray will show a radiolucent lobe and the mediastinum may be shifted to the un-

involved side when overdistension is severe. This diagnosis may be confused with that of a pulmonary cyst unless lung markings can be identified in the radiolucency.

A pulmonary cyst may occur either in the periphery of the lung or centrally. The central lesions are called bronchogenic cysts and present with stridor, wheezing, or infection because a bronchus has been partially obstructed by this cyst leading to atelectasis or hyperinflation.

Pulmonary adenomatoid malformation is a collection of cysts in any part of the lung. A chest x-ray shows a mass with scattered areas of radiolucency. There may be a mediastinal shift if large cystic areas are present. Treatment consists of lobectomy in symptomatic infants.

Accessory or sequestered lobes are usually not symptomatic in the newborn but may be mistaken for other lesions. They appear as radiopaque chest masses.

Finally, there is pulmonary lymphangiectasis. In this disorder a dilatation of pulmonary lymphatics may occur alone or may be associated with intestinal lymphangiectasia. Other anomalies such as congenital heart disease may coexist. Respiratory distress usually occurs at birth or shortly thereafter. A chest film will show hyperaeration and may resemble that of hyaline membrane disease.

There are three diaphragmatic disorders that may cause difficulty. Phrenic nerve paralysis related to birth trauma is usually associated with brachial plexus injury. This can be suspected in infants with an asymmetrical moro reflex associated with tachypnea. Chest x-ray will show elevation of the diaphragm; fluoroscopy may be of help. Eventration of the diaphragm results from congenital muscular defects of the diaphragm which caused it to balloon upward on the affected side and may result in severe respiratory distress in the newborn. Paradoxical diaphragmatic motion is seen on fluoroscopy making differentiation from diaphragmatic paralysis impossible. Diaphragmatic hernia with abdominal viscera displaced into the thoracic cavity can cause severe life threatening respiratory difficulty. The heart is usually displaced to the uninvolved side. Bowel sounds may be heard in the chest and the abdomen is scaphoid. The bowel pattern in the chest on x-ray may occasionally be confused with cystic disease of the lung but typical bowel markings may be seen. Treatment consists of immediate surgical repair and intensive postsurgical support.

The next anomaly is a tracheoesophageal fistula. This most often is the type with a proximal blind esophageal pouch and a connection between the trachea and lower esophagus. The mothers often

have polyhydramnios. The infant presents with excessive secretions followed by aspiration pneumonia. Feeding will lead to choking and regurgitation. The diagnosis should be made at birth by passing of a nasogastric tube.

Another category is intrathoracic cysts and tumors. Mediastinal or pulmonary masses may compress the trachea or bronchi leading to increased respiratory rate, dyspnea, and cyanosis.

Pneumothorax and pneumomediastinum may be either spontaneous or the result of overzealous resuscitation. These will lead to increased respiratory rate, grunting, retractions, and cyanosis. The chest x-ray will yield the diagnosis.

Pleural effusion or chylothorax usually is unilateral and the pattern will present with tachypnea, retractions and cyanosis. The chest film will show an opacified hemithorax. This fluid, when drawn off, will be clear unless the patient is fed a fat-containing formula which will then yield a milky material. Most cases resolve after one or more thoracenteses.

Transient tachypnea of the newborn was first described by Avery in 1966 as characterized by increased respiratory rate without retractions in newborn infants who do not otherwise appear ill. Chest x-ray will show prominent streaking in the hilar areas. This condition is believed to represent delayed resorption of fetal lung fluid with resultant dilatation of the perivascular lymphatics. Symptoms improve spontaneously.

The Wilson-Mikity syndrome is a disorder of the prematurely born infant characterized by cyanosis, normal or increased respiratory rates and an x-ray picture of multiple cyst-like foci of hyperaeration producing a "bubbly-lung" appearance. Although the symptoms may appear at birth, the usual onset is after the first week of life. Symptoms become more severe 4 to 8 weeks later and improve slowly thereafter. The course is prolonged but complete recovery is possible.

The final category is pneumonia which I think both of today's cases represent. These infections may be acquired prenatally, intranatally or postnatally. Predisposing factors are prolonged premature rupture of the membranes, prolonged labor, and increased obstetric manipulation. Physical examination may reveal apnea, dyspnea, tachypnea, cyanosis, fever or even hypothermia in the neonate. Chest x-ray classically shows unilateral or bilateral streaky densities and air bronchograms. Cultures are diagnostic as seen in today's cases. The cultures grew out GBBHS. This organism has been known as a cause of bovine mastitis for nearly a century, and for nearly half a century has been recognized

as an infrequent cause of puerperal infection. But since the 1960's these organisms have emerged as a major danger to the newborn. Some estimates indicate the organism causes a third of serious neonatal infections in western nations. The organism ranks next to *E. Coli* as a cause of meningitis in neonates.

In many medical centers GBBHS has emerged as a leading cause of neonatal septicemia. Depending largely on the infant's age at onset of infection, mortality may run as high as 55 to 75% even with the best available therapy. Lancefield recognized GBBHS in 1933 on the basis of cell wall "C" polysaccharide of GBBHS. Subtypes IA, IB, IC, II and III can be identified by serological methods. Serotype determination has potential clinical importance if immune deficiency is proved to be the important etiological factor in disease caused by GBBHS. Clinical findings in infants from whom GBBHS has been isolated range from asymptomatic colonization to fatal illness.

Recent reports document that GBBHS infection in the newborn takes two characteristic forms. Early onset infection occurring before 7-10 days of age and late onset disease occurring after this period. As a rule early onset disease tends to be fulminating and rapidly fatal while late onset disease is less fulminant and carries a lower mortality. As one might expect, early onset disease is often associated with obstetrical complications such as amnionitis, premature rupture of membranes, and premature delivery. The disease is commonly systemic in the infant. Infection may be caused by any of the 5 serotypes of GBBHS. Mortality rates from 60-75% are reported often despite presumably adequate therapy. Respiratory distress, apnea, shock or impetigo characterize the picture in which the infant often has septicemia, meningitis and goes on to demise, but asymptomatic bacteremia may occur also.

Most frequently early onset disease begins within 24 hours of birth. The primary site of involvement is usually the lungs from aspiration of infected amniotic fluid although the pathogen can be recovered from a number of tissues and secretions including the blood, nasopharynx, gastric aspirate, skin and meconium. Radiologically and clinically this type of infection may closely mimic hyaline membrane disease and it is possible a number of deaths ascribed to hyaline membrane disease in recent years were in reality caused by early onset GBBHS infection. The principal differentiating features between GBBHS infections and hyaline membrane disease were pointed out by Ablow et al in the January 8, 1976 issue of the *New England Journal of Medicine*. Features of severe early onset disease were preceding rupture of membranes for more than 12

hours before delivery, gram positive cocci in the gastric aspirate, apnea and shock in the first 24 hours of life, and the generation of lower peak inspiratory pressures on a volume cycled respiratory. Fifty percent of these cases of infected patients had radiographic features indistinguishable from hyaline membrane disease whereas the other cases were consistent with neonatal pneumonia. Therefore, if GBBHS infection is even a remote possibility in an infant with respiratory distress, diagnostic studies and antimicrobial therapy for presumptive sepsis are indicated.

Mothers of infants with early onset diseases commonly show vaginal colonization with the same serotype as the infected infant. This supports the view that the neonate has either been infected in utero or perhaps more often during passage through the birth canal. However, maternal streptococcal carriage is approximately 100 times more common than neonatal infection.

Late onset disease presents as a spectrum of focal infections as opposed to the systemic disease we see in early onset disease. Meningitis is a most prominent localization but arthritis, brain abscess, cellulitis, conjunctivitis, ethmoiditis, impetigo, pneumonia, osteomyelitis and otitis media have all been seen. While the mortality rate for meningitis is usually under 30%, neurologic sequelae are common. In contrast with early onset disease, late onset disease infections are not associated with maternal colonization. The logical inference is that the infection is nosocomially acquired. Aber⁴ et al¹⁰ have shown that 41% of colonized infants were born of culture negative mothers and these children became colonized later in their hospital stay than did culture positive infants of carrier mothers. The same study showed that the personnel in the labor and delivery room and nursery had a significantly higher carriage rate of GBBHS than the personnel from other hospital areas.

Streptococcal carriage rate among pregnant women may vary widely. Reports range from 2.3 to 26%. A marked discrepancy has been noted between maternal carriage rate and infant colonization rates on the one hand and the incidence of symptomatic disease in neonates on the other. Even where colonization rates among both women and their offspring are about 25%, the attack rate for early onset disease is only 0.2%. However, when attack rates are revised according to birth rates, we find a marked increase to 2% in infants under 2 kilograms and 7% in infants under 1 kilogram. Organisms from asymptomatic mothers from infants colonized at birth and from neonates with early onset disease show a rather broad distribution of sero-

types. In contrast, virtually all the cases of late onset meningitis are caused by type III.

Based on our concepts of immunity to other streptococci, transplacentally acquired opsonic antibodies are likely to protect an infant against bacteremic disease. This is supported by Baker and Kasper's⁷ report that serum from women whose infants developed meningitis due to type III lacked antibody to this serotype. By contrast, 76% of the serum from pregnant women who were vaginal carriers of type III, but nonetheless had healthy neonates, had antibodies to this serotype. Furthermore, most, but not all, neonates born of women with detectable antibody also have antibody in their cord serum indicating transplacental passage. In the low birth weight infant, there is a relative deficiency of immune globulin and antibody and the complement system is immature. This complement deficiency as well as a lack of antibody may contribute to the susceptibility of infants to GBBHS invasion. If, as Baker and others have suggested, maternal antibody deficiency is the principle determinant in late onset disease; the clinical implications might be important. Immunization of women shown to be deficient in antibody to the various serotypes might prove an effective means of preventing disease in their offspring. Alternatively, it might be feasible to administer appropriate immune globulin fractions to high-risk infants at birth—that is, to prematures or low birth weight babies of antibody deficient mothers. However, this will not prevent the early onset disease in the first few hours of life.

For the time being, the main weapon against early onset disease must be prompt diagnosis and aggressive therapy. Here, as already mentioned, it is important to distinguish GBBHS disease from hyaline membrane disease. In addition to the earlier appearance of shock and apnea, the inspiratory pressure is lower than one would expect in respiratory distress syndrome since pulmonary elasticity is greater.

While penicillin is the drug of choice for treatment of GBBHS infections, most infants are treated for presumptive sepsis with ampicillin and an aminoglycoside until cultures are reported. Therapy must be aggressive in early onset disease. As mentioned, even with the best of therapy, a distressingly high proportion of these babies will die. Also, regardless of the type of disease, therapy should be continued 10 to 14 days after the blood and/or spinal fluid has become sterile. In both early and late onset disease, irreparable damage may have occurred before it is brought under control. It is also well to bear in mind that some infants who recover from infection following massive ampicillin or penicillin therapy nevertheless continue to harbor streptococci

in the throat or rectum. A number of investigations have reported recurrence of infection or colonization after apparently successful therapy.

Since the evolution of early onset disease may be so rapid that death may ensue despite the administration of appropriate antibiotics within hours of birth, the ultimate goal must be to prevent this disease. Several possible prophylactic measures against perinatal GBBHS infections have been proposed. In general, however, those that have been fully examined are either unworkable or not practical. One of the most frequently suggested proposals is that known vaginally colonized pregnant women be treated with penicillin or ampicillin to eliminate the carrier state. This seemingly logical, practicable proposal is not feasible for a number of reasons. If we assume an infant attack rate of three per thousand and a maternal carrier rate of 25%, approximately 250 expectant mothers would have to be treated to prevent three infections. Moreover, since infection at this site may be sexually transmitted, the women's partner would have to be treated to prevent reinfection.

Another equally serious objection is that we have no assurance that penicillin or other forms of prophylaxis can effectively eliminate the streptococcal carrier state. Finally, prophylaxis of the carrier does not arrest the problem of late onset disease. As we have seen, most evidence indicates that late onset disease can be acquired nosocomially so that eradication of colonization would entail treatment of physicians, nurses, and other personnel as well as mother.

A more direct approach than antibiotic prophylaxis of colonized pregnant women would be the administration of immune globulin to antibody deficient infants born to colonized women. At least from a theoretical standpoint, it would be possible to prepare a polyvalent antistreptococcal vaccine using the capsular polysaccharide of the various serotypes much as we have done with pneumococci.

In summary, both these infants died of early onset GBBHS disease. This disease presents us with the dilemma that although we have available reasonably safe and reliable antimicrobial agents, they are not always effective in treating this infectious disease.

There remain many more questions than answers

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with this disease. What factors account for the seemingly explosive increase in perinatal infections due to GBBHS? Is virulence of the organisms in the newborn infection related to the serotypes? How does fetomaternal immunity affect the invasiveness of the organisms and the seriousness of infection? Answers to these and other questions obviously demand well-designed and well executed studies, and they should be pursued with vigor for GBBHS seems destined to be a pediatric problem pathogen for some time to come.

DR. WENGER'S DIAGNOSES

Group B Beta Hemolytic Streptococcal Sepsis

DR. BARLOW: I thought it might be interesting to present two classical cases of early-onset sepsis due to GBBHS. Only one of the patients had an autopsy and this revealed extensive bronchopneumonia.

GBBHS is a typical streptococcus being catalase negative and is easily cultivated on blood agar but selective media with antibiotics yield a higher percentage of isolation from mother or infant. The organism shows a characteristic narrow zone of beta hemolysis. It can be differentiated from other streptococci by the classic Lancefield techniques extracting C polysaccharide from the cell wall and employing group specific antibodies. We also use the camp reaction and hippurate hydrolysis for biochemical identification. The camp reaction utilizes a lysin producing staphylococcus streaked at right angles to the streptococcus. A zone of flame shaped hemolysis in the interval between the two streaks is characteristic of GBBHS.

It has been estimated that cases of meningitis in newborns due to GBBHS number 12,000-15,000 cases per year. Approximately half will die and another half will have permanent neurologic sequelae. It should be pointed out that GBBHS has been reported to cause a variety of infections in adults including postpartum infections and urinary tract infections as well as septicemia, osteomyelitis, cellulitis, and peritonitis. Diabetics and patients with serious disease or other compromise of immunologic defense mechanisms are prey to attack by this organism.

FINAL ANATOMIC DIAGNOSES

Group B Beta Hemolytic Streptococcal Sepsis

*DR. JEAN KENNY: Have you seen non-hemolytic or alpha hemolytic varieties of group B streptococci?

DR. BARLOW: Yes, we have. Unfortunately, these might be easy to miss but I think we detect them when they are present in any significant numbers.

**DR. DAVID MUNSON: Dr. Wenger has given

an excellent review of this subject. Indeed, *Escherichia coli* and GBBHS are common pediatric infections. As has been pointed out, treatment of the mothers has not been effective for the reasons enumerated. The focus, therefore, must be on the infant. It has been suggested that all babies be treated prophylactically since the disease can be so fulminant. I would like to mention two studies. In one carried out in Halifax, Virginia, 983 low birth rate infants were treated with penicillin. None developed disease due to GBBHS. None of the term infants were treated with penicillin but 7 of 14,473 infants developed disease due to GBBHS and one of these died.

Another interesting study comes from New York City where Dr. Steigman of Mt. Sinai, has been treating all newborns with 50,000 units of aqueous penicillin for the prevention of ophthalmia neonatorum. It is interesting that, in his experience, they have not seen any cases of GBBHS disease although this organism is common in other hospitals in his area as well as across the country.

DR. KENNY: Follow-up studies on preschool and school children in Dr. Steigman's series revealed no increased hypersensitivity to penicillin over a control group. Although the use of parenteral penicillin for the prophylaxis of ophthalmia neonatorum seems extreme, this practice probably did no harm to the infants; and, in fact, may have done a lot of good.

With regard to the difference between infants with hyaline membrane and GBBHS disease, I would like to mention the leukocyte count. It is usually abnormal in infants with GBBHS, either elevated or more often low. The differential count shows a marked shift to the left with a large percentage of bands. In spite of this characteristic of GBBHS disease and others mentioned by Dr. Wenger, it is very difficult to distinguish from hyaline membrane disease. Thus, one might be justified in giving antibiotics to all infants with respiratory distress syndrome until laboratory studies show no evidence of infection.

DR. MUNSON: Our general policy in the neonatal care unit has been to obtain gastric aspirate for gram stain and culture as well as total leukocyte count and differential count on all infants. If the mother does have a history of amnionitis or premature rupture

of the membranes, we have been starting the infants on ampicillin and gentamicin. If the mother does not have a history of maternal complications, we have not started treatment. I seriously wonder whether this policy should be revised and all infants treated, particularly low birth weight infants.

*DR. HOWARD HOODY: Why not use penicillin instead of ampicillin and gentamicin?

DR. MUNSON: Some feel that ampicillin and gentamicin may have a synergistic action against GBBHS streptococcus. Another reason is that *escherichia coli* is also a common pathogen in neonates and is better covered with ampicillin and gentamicin.

**DR. WARREN ANDERSON: I would like to ask what the policy now is for meconium aspiration?

***DR. JEROME BLAKE: Meconium staining simply reflects fetal distress. If you can explain the cause of fetal distress, our policy has been to culture the infants at multiple sites and then observe the infant carefully, initiating treatment if the clinical situation mandates it. If you cannot explain the cause of meconium staining then treatment is begun immediately.

Disease due to GBBHS is hard to diagnose and by the time you are able to pick up some of the subtleties, the infant may be dead. What is more, there is no guarantee that the starting antibiotic therapy will effect a cure. These infants were treated and the results were as you saw.

I will mention that babies who have sepsis will often manifest hyperglycemia which is extremely difficult to control. The oxygen requirements are also often disproportionately high.

DR. MUNSON: It would seem that the prevention of this disease may well rest on the use of a vaccine in infants or mothers or passive immunization with specific antibody to the infants or mothers since it has been shown that GBBHS disease occurs in infants of mothers who do not have antibodies to the organism.

DR. WENGER: It would seem you would have to treat the mother if you are going to prevent early onset disease.

DR. MUNSON: I agree.

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***Associate Professor of Pediatrics, School of Medicine, University of SD, and Pediatrician, Sioux Valley Hospital and Central Plains Clinic, Sioux Falls, SD.

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1. Emphasize the importance of the chairmanship.
2. Fully explain the chairman's duties and responsibilities.

3. Review committee's objectives in relation to association objectives.
4. Review and establish the bounds of committee activity and authority.
5. Review association policies, practices and procedures.
6. Have chairman review bylaws and constitution.
7. Provide a list of other committees and their objectives including names of respective committee chairmen.
8. Provide a list of members on the association's governing body.
9. Have chairman review current committee program of work; identify the chairman's role.
10. Provide complete background material outlining previous committee activities and accomplishments.
11. Have chairman review minutes of previous committee meetings.
12. Have chairman review all committee projects and programs—those continuing and those in various stages of development and completion. This includes both short and long range plans.
13. Review scheduled meetings, locations and dates.
14. Have chairman review all current assignments of individual committee members.
15. Have chairman review roster of last year's committee and current membership listing.
16. Have chairman review criteria used in selecting new members of the committee.
17. Identify staff assistance available.

— — —

REPORT ON SURVEY OF 1978 GRADUATING FAMILY PRACTICE RESIDENTS

The total number of graduates surveyed was 1,548. Of this number, 1,385 (89.5%) responded. Of these respondents, 1,359 indicated type of practice arrangement and 1,082 specified the size of the community which they plan to serve. A summary of the results as of August 1978, follows.

PRACTICE ARRANGEMENTS OF 1978 GRADUATING RESIDENTS

Type of Practice Arrangement	Number of Reporting Grads	Percentage of Total Reporting Grads
Family Practice Group	411	30.2%
Multi-Specialty Group	138	10.2%
Two-Person Family Practice Group (Partnership)	262	19.3%
Solo	185	13.6%
Military	130	9.6%
Teaching	70	5.1%
USPHS	61	4.5%
Emergency Room	12	0.9%
Hospital Staff (F-T)	51	3.8%
None of the above	39	2.8%
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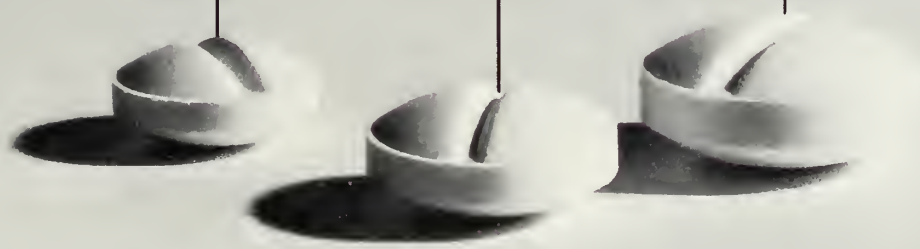
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(continued next month)

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CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma, agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. **Drug Dependence:** Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. **Use in Pregnancy:** Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. **Use in Children:** Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdose. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: **Cardiovascular:** Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. **Central Nervous System:** Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. **Gastrointestinal:** Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. **Allergic:** Urticaria, rash, ecchymosis, erythema. **Endocrine:** Impotence, changes in libido, gynecomastia, menstrual upset. **Hematopoietic System:** Bone marrow depression, agranulocytosis, leukopenia. **Miscellaneous:** A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in mid-evening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in mid-morning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdose include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phenolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdose.

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This Is Your Medical Association

The Nineteenth Annual South Dakota Regional Meeting of the American College of Physicians and the South Dakota Society of Internal Medicine was held in Rapid City, with **E. W. Sanderson, M.D.**, Sioux Falls, ACP Governor for South Dakota, and **William Quick, M.D.**, Yankton, President of the South Dakota Society for Internal Medicine, presiding. Special guest speaker was Robert E. Van Scoy, M.D., Infectious Disease Division, Mayo Clinic, Rochester, Minnesota. Case reports and other presentations were given by several South Dakota physicians during the one and one-half day session.

* * * *

Clarence "Pen" Kooiker, M.D., 68, Memphis, Tennessee, died following a lengthy illness. Dr. Kooiker was a diplomate of the American College of Radiology and served in the U. S. Public Health Service from 1948 to 1969. He practiced with the PHS at Sioux San Hospital, Rapid City, for several years prior to his retirement. Dr. Kooiker was a past member of the Black Hills District Medical Society and the South Dakota State Medical Association. He is survived by his wife, one daughter, one son and three grandchildren.

Thomas Aceto, Jr., M.D., Sioux Falls, spoke on "Fertility in Children With Growth Disorders" at a public lecture in Minneapolis sponsored by the Minnesota-Twin Cities Chapter of Human Growth Foundation.

* * * *

Willis Sutliff, M.D., and **Thomas Henry, M.D.**, Rapid City, gave a review of sudden infant death syndrome and discussed the medical-legal system involved in such deaths at a regional SIDS awareness seminar held in Rapid City.

* * * *

Northeastern Mental Health Center, Aberdeen, has announced the hiring of **Al Telfeian, M.D.** as the medical director. Dr. Telfeian was a practicing psychiatrist in Portland, Maine, prior to coming to South Dakota and will replace Dr. Glen Shaurette who has moved to South Carolina.

* * * *

David Oey, M.D., Sisseton, and **Lori Ann Remund**, Wilmot, were married September 10. Dr. Oey is a general practitioner at the Sisseton Clinic.

* * * *

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Joseph Lovering, M.D., 69, Webster, South Dakota, died September 7. Dr. Lovering was a graduate of the University of Pennsylvania School of Medicine and served a two year internship in Philadelphia. He served in the armed forces during World War II and established his practice in Webster in 1946. Dr. Lovering was an honorary member of the Whetstone District Medical Society, the South Dakota State Medical Association and the American Medical Association. He is survived by his wife, Dorothy; one son, James, Tempe, Arizona; one brother and one sister.

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**University of South Dakota School of
Medicine Physician Extender Program:
Proposal for a New Primary Health
Care Team**

Robert Hayes, M.D.

Barbara Pierce, R.N., Phy. Assist., N.P.

Marilyn Seymour, R.N., Phy. Assist.

Paul Francois, R.N., Phy. Assist., N.P.

7

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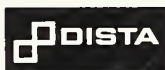
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Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

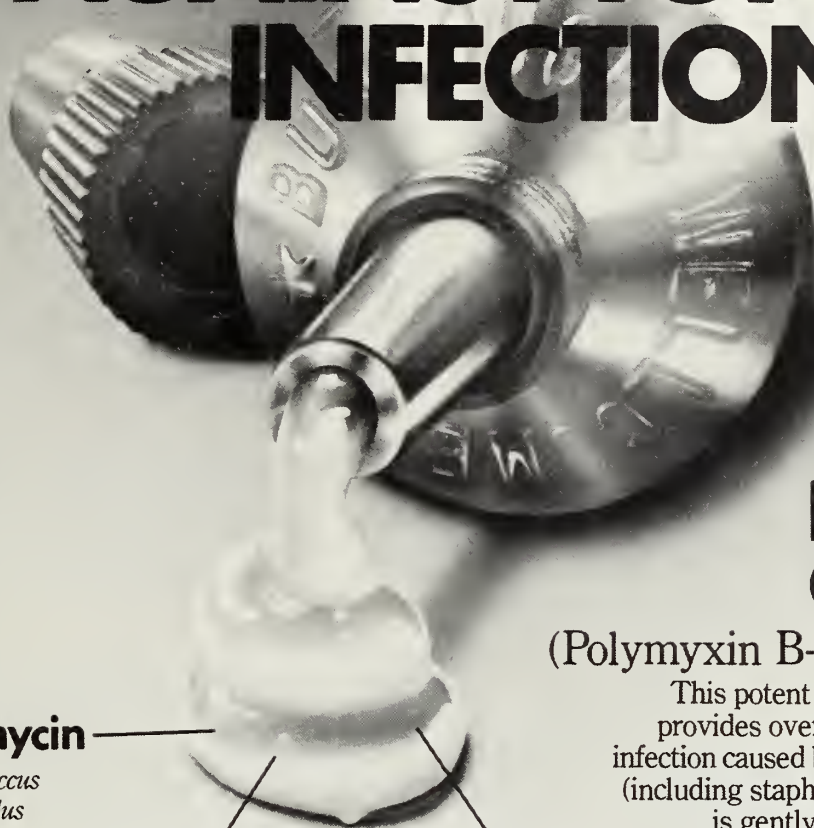
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Official publication of the
South Dakota Chapter of
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Family Physicians

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Future Meetings

January

Pulmonary Medicine, Mayo Foundation Outreach Seminar, McKennan Hospital Aud., Sioux Falls, SD, Jan. 19-20. Cat. I AMA & AAFP prescribed credits. Contact: Sec., Medical Ed., McKennan Hospital, 800 E. 21st St., Sioux Falls, SD 57101.

Critical Care, Rapid City Regional Hosp., School of Nursing, Rm. 106, Rapid City, SD, Jan. 19-20. 7 hrs AMA Category I credits. Contact: A. A. Lampert, M.D., Dir. of Med. Ed., Rapid City Regional Hosp., Rapid City, SD 57701, (605) 394-3064.

Nutrition and Prevention of Heart Disease, Can We Tell Our Children What To Eat? McKennan Hosp. Aud., Sioux Falls, SD, Jan. 20. Fee: \$3, no charge for students with I.D. 3 hrs. AMA Category I credits. Contact: D. H. Cordes, M.D., Dept. of Community and Family Medicine, USD School of Med., Vermillion, SD 57069, (605) 677-5656.

Cardiology Today, U. of Iowa College of Medicine, Iowa City, IA, Jan. 22-25. Cat. I AMA credits. Contact: Office of CME, 285 Med Labs, U. of Iowa, Iowa City, IA 52242.

Management of the Difficult Patient, Human Services Center Aud., Yankton, SD, Jan. 23. No fee. 2 hrs. AMA Category I credits. Contact: Bill Arbes, Ph.D., Dept. of Psychiatry, 2501 West 22nd St., Sioux Falls, SD 57101, (605) 339-6785.

National Conference on Forensic Medicine and Society, Hotel del Coronado, San Diego, CA, Jan. 25-27. Fee: \$160 for members, \$185 for non members. Contact: American Society of Law & Medicine, Forensic Medicine and Society, 454 Brookline Ave., Boston, MA 02215.

Violence in the Family, McKennan Hosp. Aud., Sioux Falls, SD, Jan. 27. No fee. 8 hrs AMA Category I credits. Contact: Bill Arbes, Ph.D., Dept. of Psychiatry, 2501 W. 22nd St., Sioux Falls, SD 57101, (605) 339-6785.

Radiology of the Acutely Ill and Injured Patient—Update 1979, Stouffer's Hotel, Greenway Plaza, Houston, TX, Jan. 26-27. Fee: \$150. 14 hrs. AMA Category I credits. Contact: Div. of CME, U. of Texas Health Science Center at Houston, P.O. Box 20367, Houston, TX 77025.

Sixth Annual Neurological Update, Konover Hotel, Miami Beach, FL, Jan. 29-Feb. 2. 6, 24, or 30 hrs. credits. Contact: Div. of CME, D23-3, U. of Miami School of Medicine, P.O. Box 016960, Miami, FL 33101.

February

Black Hills Winter Ski Seminar, Holiday Inn of the Northern Hills, Spearfish, SD, Feb. 1-3. 12 hrs. Category I AMA & AFP credits. Contact: L. H. Amundson, M.D., c/o SDSMA, 608 West Ave., North, Sioux Falls, SD 57104.

Management of the Difficult Patient, St. Mary's Hosp., Pierre, SD, Feb. 8. No fee. 2 hrs. AMA Category I credits. Contact: Bill Arbes, Ph.D., Dept. of Psychiatry, 2501 W. 22nd St., Sioux Falls, SD 57101 (605) 339-6785.

(continued on page 3)

(continued from page 2)

Family Practice Update, Boyne Highland, Harbor Springs, MI, Feb. 4-9. Cat. I credits. Contact: Office of CME, Towsley Center for CME, U. of Mich. Med. School, Ann Arbor, MI 48109.

Fourth Annual Vail Family Practice Conference, The Mark, Vail, CO, Feb. 10-17. 22 hrs. AMA Cat. I credits. Fee: \$220. Contact: Vail Family Practice Conference, P. O. Box 11366, Denver, CO 80211.

Second Annual Vail Urology Conference, Lion Square Lodge, Vail, CO, Feb. 10-17. 22 hrs. AMA Cat. I credits. Fee: \$220. Contact: Vail Urology Conference, P. O. Box 11366, Denver, CO 80211.

Medical Staff Law and Bylaws, Doubletree Inn, Scottsdale, AZ, Feb. 12-14. Fee: \$335. Contact: Aspen Systems Corp., 20010 Century Blvd., Germantown, MD 20767.

Refresher Course for the Family Physician, U. of Iowa College of Medicine, Iowa City, IA, Feb. 13-16. Cat. I AMA credits. Contact: Office of CME, 285 Med Labs, U. of Iowa, Iowa City, IA 52242.

Fifth Annual Vail Ob-Gyn Conference, The Mark, Vail, CO, Feb. 17-24. 22 hrs. AMA Cat. I credits. Fee: \$220. Contact: Vail Ob-Gyn Conference, P. O. Box 11366, Denver, CO 80211.

Fourth Annual Vail Psychiatry Conference, Lion Square Lodge, Vail, CO, Feb. 17-24. 22 hrs. AMA Cat. I credits. Fee: \$220. Contact: Vail Psychiatry Conference, P. O. Box 11366, Denver, CO 80211.

First Annual Vail Emergency Medicine/Critical Care Conference, Kiandra-Talisman Lodge, Vail, CO, Feb. 17-24. 22 hrs. AMA Cat. I credits. Fee: \$220. Contact: Vail Emergency Medicine/Critical Care Conference, P. O. Box 11366, Denver, CO 80211.

Sixth Annual Pediatric Dermatology Seminar, Galapagos Islands, Feb. 17-25. Cat. I credits. Fee: \$150. Contact: Guinter Kahn, M.D., 16800 N.W. 2nd Ave., North Miami Beach, FL 33169.

Emergency Medicine, U. of Michigan Center, Ann Arbor, MI, Feb. 19-23. Cat. I credits. Contact: Office of CME, Towsley Center for CME, U. of Mich. Med. School, Ann Arbor, MI 48109.

16th Annual Meeting of the Federation of Western Societies of Neurological Science, Inc., Mountain Shadows, Scottsdale, AZ, Feb. 22-25. Contact: Larry Stern, M.D., Program Chrmn., U. of Arizona Dept. of Neurology, Tucson, AZ 85721.

Dermatology, Mayo Foundation Outreach Seminar, McKennan Hospital Aud., Sioux Falls, SD, Feb. 23-24. AMA Cat. I & AAFP prescribed credits. Contact: Sec., Med. Ed., McKennan Hospital, 800 E. 21st St., Sioux Falls, SD 57101.

Practical Approaches to Depression, Family Health Center, Aberdeen, SD, Feb. 24. No fee. 2 hrs. AMA Category I credits. Contact: Bill Arbes, Ph.D., Dept. of Psychiatry, 2501 W. 22nd St., Sioux Falls, SD, 57101, (605) 339-6785.

Ninth Annual Aspen Radiology Conference, Aspen Institute for Humanistic Studies, Aspen, CO, Feb. 24-March 3. 25 hrs. AMA Cat. I credits. Fee: \$220. Contact: Aspen Radiology Conference, P. O. Box 11366, Denver, CO 80211.

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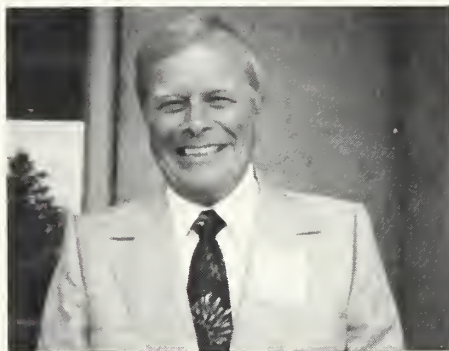
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7:00-9:00 p.m. Registration
7:00 p.m. SDAFP Board of Directors
Meeting — Deer Mountain
Room

7:30-8:10 a.m. "Problems in the Newborn
Chest"
Gayle H. Bickers, M.D.
8:15-8:55 a.m. "Outpatient Evaluation of
Growth Delay, Delayed Pu-
berty and Short Stature"
Peter W. Bickers, M.D.
9:00-9:40 a.m. "Problems in the Newborn
Abdomen"
Gayle H. Bickers, M.D.
9:45-5:30 p.m. WINTER SPORTS TIME

THURSDAY, FEBRUARY 1, 1979

MORNING SESSION

Michael Brown, M.D., Moderator

7:00-7:30 a.m. Registration, Complimentary
Continental Breakfast
7:30-8:10 a.m. "Iron Deficiency in Children
—What's New"
L. Gilbert Thatcher, M.D.
8:15-8:55 a.m. "URI's Revisited (Chlamydia,
Mono, Sinusitis, Strept)"
Peter W. Bickers, M.D.
9:00-9:40 a.m. "Hematologic Clues of Sys-
temic Disease in Children"
L. Gilbert Thatcher, M.D.
9:45-5:30 p.m. WINTER SPORTS TIME

EVENING SESSION

Gary Welsh, M.D., Moderator

5:30-6:10 p.m. "Skeletal Trauma in Chil-
dren"
Gayle H. Bickers, M.D.
6:15-6:55 p.m. "Splenomegaly, Splenectomy
and Related Medical Prob-
lems in Children"
L. Gilbert Thatcher, M.D.
7:00-7:40 p.m. "Current Therapy of Asthma"
Peter W. Bickers, M.D.
7:45-9:00 p.m. Complimentary hot wine and
hot buttered rum — Poolside

FRIDAY, FEBRUARY 2, 1979

MORNING SESSION

Buron Lindbloom, M.D., Moderator

7:00-7:30 a.m. Registration, Complimentary
Continental Breakfast

EVENING SESSION

Charles Barton, M.D., Moderator

5:30-5:55 p.m. "Pitfalls in Childhood Frac-
tures"
John J. Billion, M.D.
6:00-6:25 p.m. "Stress Testing"
Robert C. Talley, M.D.
6:30-6:55 p.m. "Congenital Dislocation of
the Hip in Children"
John J. Billion, M.D.
7:00-8:00 p.m. Complimentary Cocktails —
Poolside
8:00 p.m. Dinner — Goldrush Room
"On the Lighter Side"
Roger P. Millea, M.D.

SATURDAY, FEBRUARY 3, 1979

MORNING SESSION

Bruce Lushbough, M.D., Moderator

7:00-7:30 a.m. Registration, Complimentary
Continental Breakfast
7:30-8:10 a.m. "Treatment of Hypertension
— Focus on Beta Blockers"
Robert C. Talley, M.D.
8:15-8:55 a.m. "Management of Low Back
Pain"
John J. Billion, M.D.
9:00-9:40 a.m. "Post MI — What Studies
Are Indicated?"
Robert C. Talley, M.D.
9:45 a.m. Seminar Closes

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UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE PHYSICIAN EXTENDER PROGRAM: PROPOSAL FOR A NEW PRIMARY HEALTH CARE TEAM

Access to our existing primary health care system in South Dakota is denied many who live in rural, isolated communities. A new primary health care team is proposed which would utilize four physician extenders (physician's assistants and nurse practitioners) and one full time supervising physician as a primary health care team to serve four rural communities. A report of the University of South Dakota School of Medicine's Physician Extender project in west-central South Dakota is offered in detail with recommendations for proposed expansion. The authors emphasize medical control and quality care as results of this proposed primary health care team.

by

Robert H. Hayes, M.D.*

Barbara Pierce, R.N., Phy. Assist., N.P.

Marilyn Seymour, R.N., Phy. Assist.

Paul Francois, R.N., N.P., Phy. Assist.

The problem today which is vexing to South Dakotans as well as all other Americans is who will lead the way in delivering primary health care? Or, another way of stating the problem is, how can all South Dakotans get into our health care system? Someone must give thought to the idea of trying to expand our existing system of primary care. It can be done by making some long overdue and meaningful changes—additions of new people in the old places.

Four million (4,000,000) people work in the health care industry in the United States. \$139 billion dollars (\$139,000,000,000) was spent in 1976 for health care.¹¹ In spite of this, poor availability of personalized, 24-hour health care with remarkably little emphasis on preventive medicine is still the reality. There are enough specialists trained to handle complicated operations and rare diseases, there are enough hospitals of good quality to perform near miracles, there is enough of our new technology distributed evenly enough to include South Dakota, and there is hope that our new and emerging emergency medical services system will provide an adequate and modern ambulance system. In 1930, 75 percent of U.S. physicians were general practitioners and 25 percent were specialists.⁹ Today virtually all medical school graduates are entering residency training to become specialists.

Manpower problems in delivery of health care are further aggravated by our traditional pattern of medical practice in which the primary care physician spends an inordinate amount of his limited time performing tasks that could be done as well or better by paramedical personnel.¹⁰ Thus, there remains a desperate need for new health care professionals who can serve as a point of entry into the health care system, manage the common ailments which constitute 80 percent of the health problems presented, deliver and emphasize preventive medicine, and assume continuing responsibility for the patient's total care.^{7,4}

What we need (and now have the opportunity of developing in South Dakota) is a new health care team. It really is merely an addition to our old team which disappeared with the advent of new highways, new communications, new technologic advances which, in our medical system's case, led to speciality medicine. That we had to do because it was inevitable but what it left was a gap—that of a poor system of primary health care. Many people have no access to our specialty system which can perform miracles but cannot care for the simple common ailments which constitute 80% of health problems. We feel that the old primary health care team must have some substitutes—our physician extenders.

I believe that the family practitioner should be the key provider on the primary health care team. To us he is still the general practitioner. In addition to having the "G. P.'s" broad knowledge of diseases

*Director, Physician Extender Program, USD School of Medicine.

and of episodic treatment, the new family practice physician has training in the behavioral sciences and is dedicated to the concept of total health care.^{8,12} Being a generalist, he or she can treat both sexes and all ages. In addition, his experience with the family and his knowledge of the family allows him to recognize the influence of family dynamics on individual illnesses. This is impossible if each family member goes to a separate specialist.

Many people who write on the subject have recommended that the "Health Care Team" be made up of a pediatrician, an internist, an obstetrician, and perhaps a surgeon. Yet from the standpoint of patient care and satisfaction, these multi-specialty teams are proving to be unsatisfactory. A major problem seems to be cross coverage—the surgeon is unhappy at having to care for a colicky baby; the internist feels ill at ease performing minor surgery; and the pediatrician has not been trained to care for octogenarians. These multi-specialty groups have found that they are just not delivering good primary care and they are quickly adding family practitioners to deal with the problems presented by the patient's home and work environment and his interpersonal relationships.⁵

Andrus says the modern family physician is no longer a self-contained, lone practitioner who, like the horse and buggy doctor, tries to conquer every ill by himself. The new physician recognizes that problems of maintaining health and preventing disease require cooperation with colleagues other than physicians and skills other than those of the M.D.¹

The concept of Physician Extenders came about when we began to have other personnel in the health field begin to extend the capability of the physician. The first were undoubtedly the Nurse Anesthetists, the next were probably the Nurse Midwives who practiced in Kentucky. Somewhere in all this time came the great numbers of medical corpsmen in the Armed Forces, some of whom were assigned duties which were previously assigned to physicians. These people did, indeed, extend the capability of the physician to more people—and to people who would not or could not be seen by the physician. Then, after World War II, with the above groups providing a backlog of experience, Intensive Coronary Care became a reality. No longer could there be any question that other health personnel were extending care to sick people who had previously had to rely upon the physician himself for that care. Then in 1965, Nurse Practitioners and Physician's Assistants appeared. Now we have names like Midlevel Practitioners, Medex, Primex, Family Nurse Practitioners, Pediatric Nurse Practitioners, Adult Nurse Practitioners, Urologic Physician As-

sistants, Child Health Associates—only to mention a few. Basically they are health care professionals trained to perform functions formerly done only by the physician.¹⁰ Indeed, they do extend a physician's capability—hence, the generic team "Physician Extender."

Perhaps they came along because the greatest unresolved issue in health in the 60's and yet today was and is—access.³ Along with access, but secondary to it is, of course, cost. Physician extenders can contribute to the solution of both problems in South Dakota. It is our opinion that access is the more pressing problem just as Dr. Fein has stated.

Physician extenders will probably be used in offices, institutions, and also independent practice sites. It is probably the former where most physician assistants and nurse practitioners will be used and are now being used. Institutions are certainly no problem but do not represent a big percentage of our physician extender placement in South Dakota. It is the latter, independent sites, where all of the anxiety has been produced. The anxiety is principally on the part of physicians who feel most threatened by the formally trained new physician extender.¹³

Realizing that most anxiety is created by not having knowledge about a subject, South Dakota physicians themselves began to search for information.

The physician extender concept was then tested in South Dakota in 1972-73 in a pilot project involving four counties (Jones, Melette, Todd and Stanley) without doctors. It was examined critically by peer groups; it did meet the need of the public and was accepted by it; it did show that a part of health care could be delivered by physician extenders; but it did not convince the practicing physicians that Physician Extenders could be a useful part of the new primary health care team in South Dakota. Indeed, maybe it only increased the anxiety noted by Zubkoff and Zubkoff above.¹³

Physicians then (in 1974) raised many questions which might be summarized by the following list:

1. Is physician extender care really acceptable to the public?
2. Is the care by physician extenders really quality care?
3. Is the physician extender and his employing physician opening a medico-legal Pandora's box?
4. How much of the physician's time is required for adequate supervision?
5. Is the physician extender program economically feasible?
6. Can physician extenders be reimbursed by insurance companies for their services?

7. How many physician extenders can a doctor supervise?
8. Will having a physician extender at a given site prevent recruitment of a physician for that site?
9. Can the drugs prescribed be prescribed safely and within the law?
10. At what points in South Dakota should independent site physician extenders be utilized?

These and other questions were raised and the official position of most of the professional societies was that we did not know enough about the use of the physician extenders to warrant full-fledged support of them. Detailed analysis of the questions revealed the real concern was about the quality of care, medical responsibility, and financing. Fortunately, even the conservative doctors had supported the idea (and others) in order to try to deliver health care for underserved areas. However, doctors were polled and less than 20 percent who responded felt that it was an idea worth supporting. On the contrary, the State Legislature felt that a demonstration project testing the concept over a three or four year period was necessary to collect adequate data and would serve as a reference point for physicians and nurses to consider when considering a

Physician Extender.

Our project was designed by the University of South Dakota School of Medicine to help answer problems which doctors, nurses and other health professionals had regarding the physician extender concept. It was important that we have both nurse practitioners and physician's assistants in the study. In fact, all of our people are qualified as both. These young people are all nurses and they work as either physician's assistants or as nurse practitioners. The Wall Rural Ambulatory Care Clinic is manned by Mrs. Barbara Pierce, a physician's assistant; the Jones County Rural Ambulatory Care Clinic in Murdo is directed by Mrs. Marilyn Seymour, a physician's assistant; and the Melette County Rural Ambulatory Care Clinic in White River is attended by Mr. Paul Francois, a nurse practitioner. These three were chosen from a field of 54 qualified applicants.

The Wall and Murdo units (since physician's assistants were involved) fell under the supervision of the South Dakota Board of Medical and Osteopathic Examiners and the White River unit, having a nurse practitioner, fell under the supervision of the South Dakota State Board of Nursing.

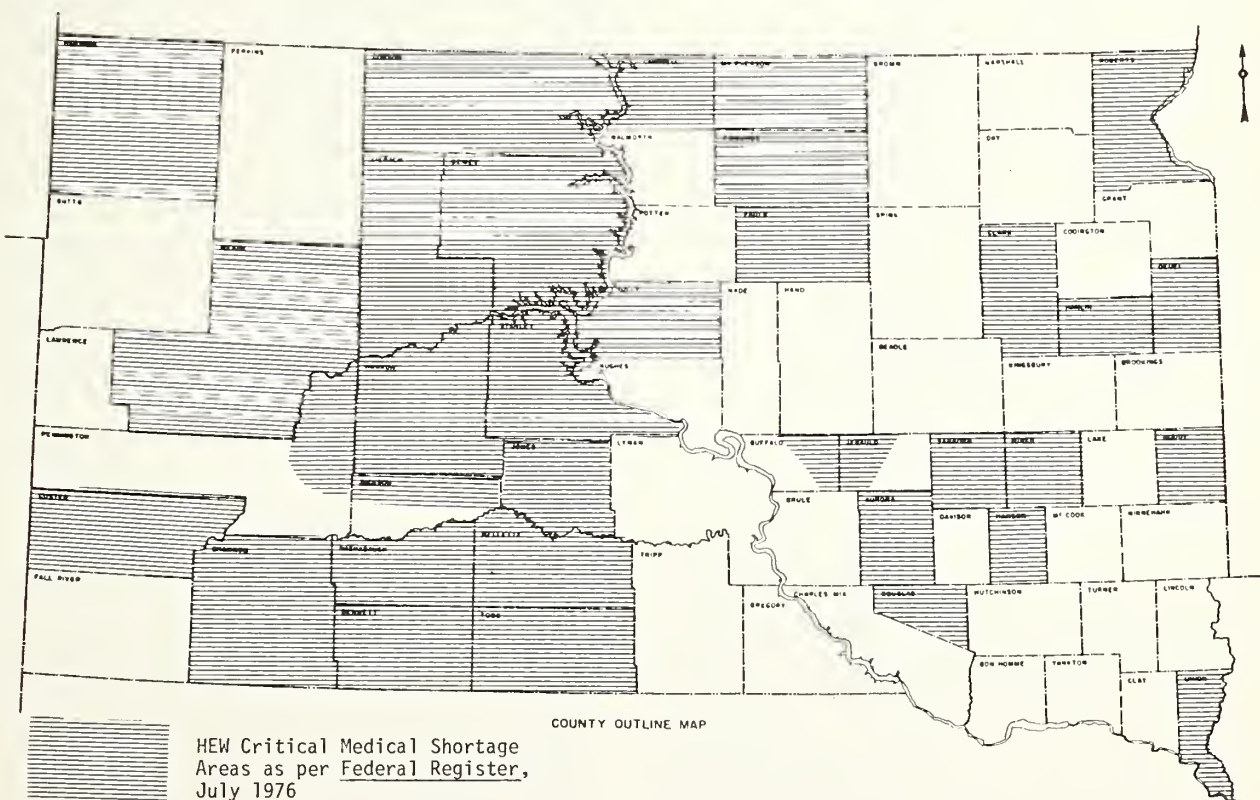


Figure 1
HEW critical medical shortage areas; July 1976.

First of all these different administrative modules were selected to assist in the community support and involvement in the project. A local health board was formed to select the physician extender, interview and contract the extender, set the fee schedule, and, in brief, carry out the business of the Rural Ambulatory Care Clinic (RACC). In Wall, South Dakota, the Board is a subcommittee of the Chamber of Commerce, a legally incorporated body. In Murdo, South Dakota, the project is responsible to the city of Murdo and Jones County. A special board was designated authority by those governmental units to carry out this function. In White River, South Dakota, the RACC was set up by Melette County with a special board designated as the County Health Board. These boards had, among other responsibilities, the legal and important task of raising funds (someone had to agree to pay the salaries, malpractice insurance premiums, bills, etc.)

These local boards set policy, handled the business of the clinics, authorized what equipment was to be purchased, etc. Each board, in a written agreement, then turned its physician extender over to the physician supervisor, Dr. Robert Hayes, for technical supervision and medical responsibility. THIS WAS TO INSURE THAT MEDICAL AND PATIENT PROBLEMS WOULD BE UNDER MEDICAL CONTROL.

We had nothing but cooperation from every local, state, and federal unit of government. Every board, every bureau and program of state government assisted us in many ways. The State Health Department, the Regional Medical-Comprehensive Health Planning group, the State Travel Commission, the State Board of Medical and Osteopathic Examiners, the State Board of Nursing, the Legislative Research Council, the State Department of Social Services, the Governor's Office, the Office of each of our Congressional Delegation, Boards of County Commissioners, each municipal organization, and countless numbers of State Legislators and citizens alike assisted us in many ways from the procurement of actual equipment item by item to moral and financial support. One health official said "the intense interest in the physician extender program in South Dakota must mean that there may be a way to deliver health services to communities without the doctors being present. The cooperation from all of the health disciplines does point out that they really are interested in the problem of delivering their services even if not in their traditional model."²

As was stated, our project was designed to help answer questions of the health professionals in our

state and, at the same time, was to help deliver primary health care to specific medically underserved areas of our state. The University of South Dakota Medical School would provide the supervising physician, Dr. Robert H. Hayes, who would reside in Wall, South Dakota, one of the communities without a doctor in the module. The report of how primary medical care was delivered in these three communities is probably best described in the following paragraphs.

Dr. Hayes would reside in Wall, spend time with the RACC there on Monday and Tuesday, would travel to Murdo on Wednesday, on to White River on Thursday, and back to Wall on Friday. This circuit is 116 miles one way and an ordinary Travel Commission vehicle was used for this purpose. The two free days would be used to assist program placement of Physician Extenders, to assist communities in their questions regarding the program, and to assist in counseling of physicians and physician extenders regarding the program. The School of Medicine set up an office with a full time secretary in the old clinic building in Wall. Radio and telephone contact could be maintained at all times. The Emergency Medical Services system radio put Dr. Hayes in contact with any area hospitals or ambulance service so a patch could be made in that fashion. Telephone was the principal method utilized because of confidentiality. Obviously, patients being referred to another physician or hospital would bring into the communications scheme yet other physicians and hospitals.

The physician extenders in our modules were divided into three units at Wall, Murdo, and White River—each town without a doctor. (Figure 1) Whatever buildings were available were utilized for the Rural Ambulatory Care Clinics (RACC). Each community's local governing board set the hours, fees, salaries, etc. What has happened there has been defined by the health planners as "access" and has been defined by the people as "health care." We have called it primary health care since it is when the patient first and last encounters the health care system of our state. What we do in primary health care is best described by the typical daily log of one of the RACC'. (Table I) This does not, however, include numerous phone calls, etc. It does indicate that 21 patients were seen and what was done. Three of the 21 were referred to physicians and two of these were hospitalized. The fracture was a definite emergency and no cases were life threatening ones.

For detailed information of numbers of patients seen, expenses incurred, income generated, etc., Tables II, III, and IV are included.

Table I
A Typical Day (Daily Log)

	Age	M/F	Complaint	Diagnosis	Charge	Cash	Procedure
1.	80	M	burned upper leg	Cellulitis	\$ 8.00	\$ 8.00	Office call
2.	19	M	recheck	Cellulitis	8.00		Office call
3.	67	F	BP check	Hypertension	3.00	3.00	BP Check
4.	83	F	BP check	Hypertension	3.00	3.00	BP Check
5.	24	F	Discussed contraception	Healthy	8.00	8.00	Office call
6.	19	F	Tension	Tension	8.00		Office call
7.	49	F	Headaches	Headaches	8.00		Office call
8.	53	M	Recheck	Sprained ankle	8.00		Office call
9.	17	F	Wants pap	Healthy	13.00		Office call, pap smear
10.	41	F	Wants pap	Healthy	13.00	13.00	Office call, pap smear
11.	60	F	Feels terrible	Thyroid problem	48.00		OC, SMA ₁₂ , T ₃ T ₄ T ₇ , Chest X-ray
12.	17	M	Sore throat	URI	11.00		Office call, Throat culture
13.	01	M	Temperature	Pharyngitis	8.00	8.00	Office call
14.	48	F	Back problems	Menopausal syndrome	12.00	12.00	Office call, UA
15.	65	F	Ins. physical	Ins. physical	15.00		Insurance physical
16.	24	M	Prostate tender	Prostatitis	12.00	12.00	Office call, UA
17.	45	M	Earache	Otitis media	8.00		Office call
18.	14	M	Cough	Bronchopneumonia	23.00	23.00	Office call, Chest X-ray
19.	17	M	Muscle spasm	Muscle spasm	8.00	8.00	Office call
20.	03	F	Sore eyes	Conjunctivitis	8.00		Office call
21.	12	M	Motorcycle acc.	Fractured leg	5.00		Injection

Table II

WALL CLINIC

1975-76

Month	Patients seen	Income	Expenses	Ave. Patients/day
Dec. '75	233	1,460.00	662.23	10
Jan. '76	311	2,393.00	2,962.63	14
Feb. '76	406	3,243.00	193.89	20
Mar. '76	342	2,390.56	1,882.63	14
Apr. '76	326	2,916.00	2,198.93	14
May '76	296	2,350.30	2,588.24	14
Jun. '76	396	2,791.04	2,100.80	18
Jul. '76	335	2,951.59	2,945.70	15
Aug. '76	382	3,852.48	1,841.31	17
Sep. '76	354	3,353.34	2,368.65	16
Oct. '76	278	2,716.50	2,451.76	13
Nov. '76	281	3,185.00	2,305.35	13
	3,940	\$33,602.81	\$24,502.12	Ave. 14/day

1976-77

Month	Patients seen	Income	Expenses	Ave. Patients/day
Dec. '76	319	2,581.70	3,438.72	14
Jan. '77	255	3,415.28	2,954.10	11
Feb. '77	242	2,521.71	3,120.76	11
Mar. '77	268	3,390.60	1,909.50	12
Apr. '77	265	2,471.58	2,638.25	12
May '77	310	2,575.95	3,090.01	13
Jun. '77	352	4,027.52	2,993.43	15
Jul. '77	404	4,706.35	2,718.93	18
Aug. '77	384	5,149.06	2,440.22	17
Sep. '77	362	4,361.22	2,346.80	16
Oct. '77	265	3,095.30	2,806.24	12
Nov. '77	323	3,010.42	3,115.65	15
	3,749	\$41,306.69	\$33,572.61	Ave. 14/day

Totals

Total # patient visits ('75-'77)	7,689	Ave. telephone calls/month	24
# Patients seen ('75-'77)	2,350	Accounts Receivable	\$ 4,953.35
# Transient Patients seen ('75-'77)	425	% of patients Medicare & Medicaid	25%
# Patients seen ('75-'77)	2,775	Total Expenses ('75-'77)	\$58,074.73
# Referrals ('75-'77)	975	Total Income ('75-'77)	\$74,909.50

MURDO CLINIC

Table III
1975-76

Month	Patients seen	Income	Breakdown total expenses	Ave. Patients/day
Dec. '75	184	1,143.31	Drugs 6,084.85	8
Jan. '76	277	2,062.81	Utilities 756.00	13
Feb. '76	287	1,889.39	Rent 1,200.00	13
Mar. '76	298	1,869.65	Supplies 263.02	14
Apr. '76	261	1,834.77	Laboratory 113.00	12
May '76	185	1,287.02	Fuel 462.14	8
Jun. '76	226	1,471.77	Office Supplies 457.87	10
Jul. '76	252	1,858.73	Salaries 11,484.00	11
Aug. '76	216	1,676.98		10
Sep. '76	316	2,047.58		14
Oct. '76	258	1,531.05		12
Nov. '76	160	1,337.59		7
	2,920	\$20,010.65	\$20,820.88	Ave. 11/day

1976-77

Month	Patients seen	Income	Breakdown total expenses	Ave. Patients/day
Dec. '76	188	1,396.87	Drugs 959.12	9
Jan. '77	155	995.94	Utilities 942.91	7
Feb. '77	157	1,095.81	Rent 1,200.00	7
Mar. '77	220	1,369.49	Supplies 505.66	10
Apr. '77	173	1,120.91	Laboratory 566.00	8
May '77	167	1,179.90	Fuel 360.45	8
Jun. '77	184	1,107.03	Office Supplies 496.48	8
Jul. '77	202	1,404.00	Salaries 12,389.64	9
Aug. '77	303	1,627.16		13
Sep. '77	222	2,189.05		10
Oct. '77	171	1,416.65		8
Nov. '77	144	1,038.46		7
	2,286	\$15,941.27	\$17,420.26	Ave. 9/day

Totals

Total # patient visits ('75-'77)	5,206	Ave. telephone calls/month	20
# Families seen ('75-'77)	897	Accounts Receivable	\$ 1,253.38
# Transient Patients seen ('75-'77)	113	% of patients Medicare & Medicaid	25%
# Referrals ('75-'77)	1,020	Total Expenses ('75-'77)	\$38,241.14
		Total Income ('75-'77)	\$35,951.92

Our physician extenders have seen many unusual medical and emergency cases. Diphtheria is not common today but was seen and recognized by one of our young people. Care of gunshot wounds, rattlesnake bites, poisonings, and stab wounds is accomplished with skill and dedication by the physician extenders in our module. One physician extender, during a blizzard, had to direct the father by telephone on how to accomplish an emergency home delivery. A fine infant in a howling blizzard was the result of the only person available by phone being able to respond properly. Malignant tumors have been recognized and referred. Carcinoma of the pancreas, alveolar rhabdomyosarcoma of the scalp, sarcoid tumor of the uterus, carcinoma of the cervix, malignant lymphomas, Hodgkin's disease, retinoblastoma and other malignancies were noted by the physician extenders in our module and referred to proper services for treatment. The referral process has been expedited by cooperative phy-

sicians who have understood our dilemma of being a long way from sophisticated medical center therapy. We have not seen one of these unusual cases daily but when seen, prompt referral to appropriate physicians has given the patient a chance for survival.

As might have been anticipated not all the questions would be those from the doctors and nurses but also those which would come from the Physician Extenders themselves. Problems which our physician extenders have encountered are without doubt common to other programs in other states.

1. Physician reports to the physician extender after referral of a patient.
2. Need for screening type X-ray capability.
3. Compensation under Title XVIII (Medicare) for physician extenders who were not physically present in the same building with the supervising physician.
4. Insurance companies and their various regula-

WHITE RIVER CLINIC

Table IV

1975-76

Month	Patients seen	Income	Expenses	Ave. Patients/day
Dec. '75	61	472.00	780.73	3
Jan. '76	235	2,223.34	254.21	11
Feb. '76	391	3,835.34	2,113.55	18
Mar. '76	441	4,571.15	3,875.87	20
Apr. '76	330	3,997.90	2,526.63	15
May '76	324	4,622.95	3,561.29	15
Jun. '76	311	3,745.20	2,355.24	14
Jul. '76	315	4,281.40	3,331.01	14
Aug. '76	422	5,655.40	4,039.30	19
Sep. '76	348	4,581.40	5,078.33	16
Oct. '76	337	3,884.70	4,420.01	15
Nov. '76	352	4,622.10	5,810.88	16
	3,867	\$46,492.88	\$38,147.05	Ave. 15/day

1976-77

Month	Patients seen	Income	Expenses	Ave. Patients/day
Dec. '76	347	4,428.10	4,544.34	16
Jan. '77	361	3,687.54	4,460.53	16
Feb. '77	304	5,954.90	8,554.05	14
Mar. '77	407	4,324.52	5,931.23	19
Apr. '77	352	4,115.60	4,943.17	16
May '77	272	5,410.09	1,480.34	12
Jun. '77	299	3,961.11	6,148.04	14
Jul. '77	308	4,405.84	4,077.83	14
Aug. '77	374	5,490.94	5,195.11	17
Sep. '77	338	5,246.26	6,614.23	15
Oct. '77	381	5,167.41	4,529.71	17
Nov. '77	311	6,256.79	4,980.19	14
	4,054	\$58,449.10	\$61,458.77	Ave. 15/day

Totals				
Total # patient visits ('75-'77)	7,921	Ave. telephone calls/month	90	
# Families seen ('75-'77)	652	Accounts Receivable	\$10,350.83	
# Transient Patients seen ('75-'77)	181	% of patients Medicare & Medicaid	25%	
# Referrals ('75-'77)	1,114	Total Expenses ('75-'77)	\$99,605.82	
# Indian Patient visits ('75-'77)	1,707	Total Income ('75-'77)	\$104,941.98	

tions regarding forms.

5. Relief for physician extenders by qualified replacement.

6. Continuing education for physician extenders.

After two and one half years and collection of detailed data for two years, the following comments are made regarding the questions which were raised by the doctors and other professionals and the physician extenders themselves.

The question of acceptability by the public of this concept can be dispatched the most readily. In two years of operation this module (three Rural Ambulatory Care Clinics) had 20,816 patient visits. To our knowledge we have not pleased everyone. We have one official complaint filed as a grievance with the State Medical Society. A patient did not recover with the treatment the physician had prescribed and which the physician extender carried out. However, we also have countless numbers of written and verbal compliments from patients we

attended. Patients wish to see the doctor in the module for some problems and are willing to see the extender for others. This can be, and is arranged. One of the lessons learned was that physician supervision must also include his willingness to see patients for some problems. Only with the public's knowledge that the physician is available for advice and consultation could the physician extender concept be acceptable to the public. The public in our area knows that we work as a team.

The second question of whether the care given by the physician extender is really quality care is probably best answered by the peer review process. Toward this end we have welcomed the state's Professional Services Review Organization (PSRO) to come to our clinics to review our work and pass judgement upon it. That, as yet, is not possible for that organization we were told. However, peer review of many unofficial and official types goes on continuously. The insurance companies have rea-

sonably good mechanisms for assessment. The federal programs have review teams which assess care which their recipients receive. The doctors to whom we refer patients have a pretty good idea of what was done by those rendering primary care. Whether or not the patient gets well or gets the anticipated result is also a measure of whether or not the care given is of good quality. Our assessment by a "validation team" (composed of two senior and experienced general practitioners) on any one given day is probably our best answer as to whether or not care is of good quality. These reviewing physicians spent a day with each extender and compared what they would have done with what the physician extender did do patient by patient. The favorable report (on file officially) is a credit to these young people and is our best case for good quality of care rendered. Each physician extender received a favorable rating on the care he or she had delivered.

Is the physician extender and his employing physician opening a medico-legal Pandora's box? We have no answer for that since the project is only two years old. However, the laws governing the physician extender programs were purposely written to help avoid the major causes of malpractice. By law we do no anesthesia; we do no X-ray therapy; we do no surgery which invades a major body cavity. These, after all, are the major causes of malpractice. Standard methods, standard drugs, and standard treatments are utilized. We have time to give each patient. We try to inform each patient as fully as is possible. This, we feel, will keep us from negligent treatment which will cause damage (those two items necessary to prove malpractice). Our insurance carrier continues to insure us. Our limitations are specific—we do primary care only. We have not perceived malpractice to be a problem.

How much of the physician's time is required for adequate supervision? Our experience to date indicates that a minimum of one day per physician extender per week is necessary.

The question of whether or not the physician extender program is economically feasible is best answered by both a yes and a no. These brief summaries show clearly that the program EXCEPT for the cost of the supervising physician can be met by each community. If the cost of a practicing physician were to be added and shared by four communities, we are talking about 1/4 of:

\$50,000	salary
5,000	travel support
1,500	disability insurance
4,000	fringe benefits
<u>\$60,500</u>	

or \$15,150 or, if shared by three (3) communities, 1/3 of \$60,500 or \$20,250. This added \$15,150 or \$20,250 cannot be generated by a program in a small community without raising the fee per patient to an exorbitant level. The University of South Dakota School of Medicine has paid for the supervising physician in this module. The implication is that for a site where the physician extender cannot be in a clinic with the supervising physician some method of financing the supervising physician must be found. Obviously the cost of the Unit (Rural Ambulatory Care Clinic) can be handled by the community. The community must be large enough to have enough patients to generate the following amounts of money: \$44,959 or 14.5 patients per day (at a rate of \$11.90 per patient visit.)

Table V			
Income Generation And Average Number Of Patients			Ave.
	1975/76	1976/77	Patients/day
Wall	\$33,602.81	\$41,306.69	14
Murdo (½ day)*	20,010.65	15,941.27	10
White River	46,492.88	58,449.10	15

*Our nurse physician assistant in Murdo works half days (arrangement because of new baby.) It is apparent that the community must be large enough (500-1000) to accomplish this generation of 14.5 patients per day.

Can physician extenders be reimbursed by insurance companies for their services? Our experience without question indicates a yes answer. Our biggest problem was with Title XVIII (Medicare). That program contended that unless the physician extender were at elbow's length from the doctor (the same building) that the services could not be reimbursable. Legislation in the Congress of the United States was sought and obtained and that matter was put to rest (PL-95-215). Some Blue Shield plans do pay and some do not—arguing that they only pay for physician's services. The physician extender is legally and ethically an extension of the physician, therefore, this should really pose no problem since the doctor can morally, legally, and ethically state that he did deliver that particular service. It certainly might be much easier to have the clinic have a specific vendor number and then the semantics of the doctor's signature would be immaterial. It is probably a matter of historic interest only since the Medicare legislation for Physician Extenders in the fall of 1977 (P-95-215) will undoubtedly set the trend for all of the insurance companies to follow.

How many physician extenders can one physician adequately supervise? From our experience four major factors would be: 1) How far are the extenders from the supervising physician? 2) Whether or not the supervising physician is conducting a full time private practice or whether he is supervising physician extenders full time. 3) The ability and experience of the supervising physician in primary care. 4) And the skill and experience of the supervised physician extenders. The supervising physician in this module had a circuit of units which were one day's drive apart. He could spend one day per week with each extender and have that one extra day for necessary administrative work. Our South Dakota law allows each practicing physician two assistants. It could be amended so that the Board of Medical and Osteopathic Examiners could allow a physician who was supervising physician extenders full time no more than four physician extenders. The Board of Nursing already has this discretion since their law is a general one and not specific. Our feeling is that the doctor, the extenders, and the appropriate Board should decide this number. To us it would appear impossible for any doctor to supervise more than four extenders adequately.

Will having a physician extender at a given site prevent recruitment of a physician for that site? Only time will answer this. To date, for example, it has not interfered. The communities are probably too small to support a \$50,000 physician. The only way it could be done is to have a ready-made practice which could possibly be expanded. Our impression is that it will not interfere because it probably never would have been considered. Size of the community would have to be such that enough patients could be seen to support a \$50,000 physician (the competitive wage.) This seems to be so in communities with more than 5,000 population. Murdo, an exception to this rule, has contracted for a young physician by paying (a loan) his way through medical school in return for a five year obligation in the Murdo community. Whether or not it will work out is speculative but the ready-made practice (which he would have to expand) will certainly be there.

Can the drugs prescribed in the physician extender project be prescribed safely and within the law? To this date we have had no difficulty with prescription of drugs. The physician's assistant law is specific and the law and regulations governing the nurse practice act are not. It is our feeling that the regulations of the Board of Nursing should be expanded to cover this area specifically. The South Dakota Board of Pharmacy had questions asked of

it about the prescription of medications but apparently found no irregularity or breach of good practice in our module. Continuing education, however, is an absolute requirement particularly on the information regarding drugs utilized in therapeutic regimens.

At what points in South Dakota should independent site physician extenders be utilized? Nothing probably has caused as much furor among the doctors as this point. Our impression is that an independent planning board such as the HSA (Health Service Agency) which has planning authority should set criteria, and then recommend to the appropriate board that certain communities be considered for a physician extender site of the independent type (away from the doctor.) Distance from the nearest town with more than one physician, size of the area, population of the area, whether or not geographic and climactic factors make access to health care difficult or impossible, and any industrial factors (oil or coal, etc.) should be some points which might be included as criteria. After these criteria had been applied, the amounts of money for funding of them by the state would then have to be considered. We would anticipate the existence of no more than twelve (12) such sites and more likely nine (9). If each doctor could supervise four (4) extenders, then three doctors would be needed to accommodate twelve (12) sites. At a cost of \$60,500 each this would be a cost of \$184,500 for the state share. The average contribution of each community per year would be \$44,959 and this multiplied by 12 would equal \$531,508. Thus the state would have to contribute \$184,500 while the local communities would be contributing \$531,508 to cover 12 sites. Therefore, financing may be the problem which will be the final deciding factor in any plan for expansion of the program to cover the 8-12 communities who would likely never be able to attract and hold a physician but could probably afford a physician extender.

The need for an X-ray capability arose early in our program. Originally we had felt that it would not be needed. We quickly found that our needs were for X-rays of the chest, X-rays of long bones, and of joints. To illustrate the point one can point out that a sprain can be handled by a physician extender and a fracture cannot be. To send the patient 52 miles one way to find out whether it is fractured or sprained is not good primary health care. We limit our X-rays for physician extenders to chest films, long bones, joints. We feel that skull films, spine films, and special studies (GB, GI, BE) would be contraindicated. We average 200

films per year (less than one per day.) The doctor reads the film and, with the extender, reviews it at the time of reading. Telephone or radio can put the findings in front of the physician even at 120 miles distance. Any "questionables" are referred to the nearest physician immediately. This probably has saved our patients countless miles and hours (which equate to needed dollars.) Our recommendation is that all independent sites should have a screening X-ray capability. Training courses are needed for the physician extenders who already utilize X-ray films as a tool and the courses can be expanded to teach those skills necessary to get the good films of the few body sites we do X-ray.

Qualified replacements for physician extenders as they take their appropriate time off are finally arranged for. Locum tenens relief can be handled, we found, by scheduling the vacation times far enough ahead so that replacements can be found. It was apparent after the first year with no one getting a vacation that it was necessary. Each person in health care delivery apparently needs some vacation whether he be physician, nurse, technician, or physician extender.

Continuing education for physician extenders is even more necessary than for physicians who, it could be agreed, have had more detailed preparation of many more years. The South Dakota Board of Medical and Osteopathic Examiners has done an outstanding bit of work getting a continuing education program together for our Physician's Assistants. As a regulatory board they have provided the impetus for continuing education programs for the past three (3) years. As with all continuing education programs in South Dakota, the meetings must be held in the major cities meaning that the extenders have to have their own car and travel to those cities. This leaves the community uncovered. On weekends this has not been too difficult but during the week it is a hardship. Our opinion is that we need more continuing education which can be done at the home station. For example, one of the drug companies did put on a hypertension course which was worth a considerable number of Category I credit hours for continuing medical education.

SUMMARY:

1. The demonstration module of the University of South Dakota School of Medicine located in three sites (Wall, Murdo and White River) had 20,816 patient visits in the years 1975-77. This demonstration of public support is evidence that this form of medical assistance for isolated communities is acceptable to the public.

2. Detailed records and accounts of patients seen and cared for have been assessed by physicians and have been found to be indicative of good quality of care.
3. Performance audits by a physician not affiliated with the program have been carried out on each of the physician extenders in the module and each has performed satisfactorily. The examining physician saw each patient with the physician extender and on the basis of whether or not the extender did what the physician would have done, a score was given the extender.
4. Many other questions regarding details of this part of the physician extender program have been answered.
 - The issue of malpractice has not been a problem in our module. We are insured and have encountered no problems.
 - Time required by a physician to provide adequate supervision is one day per week.
 - The program is economically feasible if one does not have to include the cost of the supervising physician.
 - Physician extenders can now be reimbursed for their services by Medicare (Title XVIII) with the passage of PL 95-215 by Congress in Dec., 1977.
 - Four physician extenders can be supervised properly by a full time physician.
 - Having a physician extender at a site will not prevent recruitment of a physician for that community.
 - Those drugs prescribed by physician extenders can be prescribed safely and within the law.
 - There are no more than 12 sites in South Dakota where physician extenders would have to practice away from the physician.
5. Problems which arose in the conduct of a program have been discussed.
 - There was a demonstrated need for a screening X-ray capability at isolated rural sites where physician extenders must practice away from the physician.
 - It is apparent that continuing education regarding pharmacology is of paramount importance for the physician extenders.
 - Qualified replacements for physician extenders are available and can be scheduled for needed time off for physician extenders.
 - Peer review for physician extenders and associated programs is needed and is desirable for good quality care.
 - Physician reports or summaries to physician extenders either telephonic or written are desirable but are sporadic in distribution.

—Continuing education for physician extenders who are practicing away from a physician (at an independent site) is critical and yet to accomplish this during working days means not providing coverage for that population at that time. Needed are courses on weekends in cities near the isolated physician extenders.

6. Recommendations for improvement of the program are made for the appropriate Boards and Agencies including the Legislature.
 1. Legislature should amend the Physician's Assistant Law to allow for a full time physician to supervise four PA's instead of two (SDL 36-4A-7).
 2. The Legislature should plan to fund the physician supervisor (full time) for up to 12 sites. This would require three full time physicians on the medical school staff. This should be a service program of the Medical School.
 3. The Health Services Agency (HSA) and the South Dakota Health Planning and Development Agency (S.D.S.H.P.D.) should prepare criteria by which independent sites for physician extenders should be selected.
 4. The South Dakota Board of Nursing should work to make the regulations for nurse practitioners similar or identical to the Physician's Assistant Law.
 5. The South Dakota Board of Pharmacy should work with the Board of Nursing, once its regulations for nurse practitioners are detailed, to amend whatever section of its laws on dispensing which would be appropriate.
 6. The Medical School of South Dakota should continue working on making continuing education available to the isolated physician extender who works away from the doctor at an independent site.
7. The State of South Dakota can remain abreast of new methods of health care delivery by a proposed new Primary Health Care Team which is under proper medical control. It is responsive to medical needs of isolated communities; it is under control of local communities; it is under control of the South Dakota Legislature; and it does give all citizens in South Dakota access to health care of reasonable quality at reasonable cost. The University of South Dakota School of Medicine has delivered, and will continue to deliver, health care as one of the five functions of a modern medical school.

This paper was reviewed by the Executive Committee of the Medical School Faculty at

its 1 April 1978 meeting. It agreed that the Medical School should continue its support of the physician extender program at the current level. It did not endorse the proposal for expansion.

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SOUTH DAKOTA MEDICAL ASSOCIATION.

SOUTH DAKOTA CHAPTER NEWS



SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105



AMA NATIONAL CONFERENCE ON RURAL HEALTH

The American Academy of Family Physicians is a cosponsor of the AMA's 32nd National Conference on Rural Health which will be held April 18-21, 1979 in St. Paul, Minnesota. In April 1978, for the first time in the history of the AMA's rural health conferences, the Academy introduced a series of continuing medical education courses to the conference. All of the courses concerned medical problems indigenous to rural areas, with a focus on how the problems might be managed most effectively in the rural environment. Conference participants noted that the quality and selection of the courses were excellent.

Some examples of this year's courses are:

- Nutritional Assessment and Management in Rural Areas
- Introduction to Poisonous and Hallucinogenic Mushrooms
- Plastic Wound Closure Techniques for the Primary Care Physician

- Agricultural Zoonoses
- Trauma in Agriculture
- Reimplantation Surgery
- Primary Management of Severe Head Trauma

A series of autotutorial sessions on zoonoses and trauma also will be offered.

Other presentations and workshops at the conference will address such practical areas as health planning, the politics of rural health, home health care, rural emergency medical services and physician recruitment. Each session is designed to provide practical instruction in developing skills which conference participants may put to use.

Each conference participant will select his own sessions to attend, according to individual informational needs. It is possible that a physician may have a scheduling conflict between a skill session he wants to attend and a CME course, but time schedules will be mailed out in advance, and several sessions will be repeated throughout the conference.

Watch for your mailing, or contact the AMA or AAFP for a brochure.

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Character and Population of Community	Number of Reporting Grads	Percentage of Total Reporting Grads	Cumulative Percentage of Total Reporting Grads
Rural area or town (less than 2500) not within 25 miles of large cities	91	8.4%	8.4%
Rural area or town (less than 2500) within 25 miles of large city	34	3.1%	11.5%
Small town (2500-25,000) not within 25 miles of large city	257	23.8%	35.3%
Small town (2500-25,000) within 25 miles of large city	183	16.9%	52.2%
Small city (25,000-100,000)	186	17.2%	69.4%
Suburb of small metropolitan area	38	3.5%	72.9%
Small metropolitan area (100,000-500,000)	90	8.3%	81.2%
Suburb of large metropolitan area	103	9.5%	90.7%
Large metropolitan area (500,000 or more)	72	6.7%	97.4%
Inner city/low income area (500,000 or more)	28	2.6%	100.0%
	1082	100.0%	

LABORATORY AIDS

Sponsored by the South Dakota Society of Pathologists

RADIONUCLIDES IN CARDIAC DIAGNOSIS

(continued from last issue)

Patients with suspected coronary artery disease and myocardial ischemia can be evaluated also with Thallium 201. It is most useful when used in patients with atypical symptomatology or equivocal stress test results. Thallium is injected while the patient is exercising and being monitored with the standard stress test technique. After completion of the exercise, the patient is imaged beginning within 10 minutes of the completion of the injection and areas of ischemia appear as "cold spots" in the myocardial wall. These areas of ischemia can be differentiated from areas of infarction by reimaging the patient approximately 3-4 hours later, at which time the Thallium should have reperfused into the ischemic areas which showed non-visualization originally.

Left ventricular function can be evaluated by the use of cyclic gated cardiac studies. Ventricular chambers are visualized by means of a blood pool imaging agent and the motion of the ventricular wall can be evaluated and ventricular function can be assessed both by visual inspection of the images and by calculation of ventricular ejection fraction. Radionuclide ventricular ejection fractions have been found to correlate well with angiographic data.

Hot spot myocardial infarct imaging with phosphate agents, as well as Thallium imaging of the myocardium, can be carried out on any high resolution imaging device. Cyclic gated cardiac studies for ventricular function evaluation require the use of a minicomputer interfaced with the imaging equipment.

Lloyd R. Wagner, M.D.
Pathologist

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Tablets Percodan® II

DESCRIPTION Each yellow, scored tablet contains 4.50 mg. oxycodone HCl (WARNING: May be habit forming), 0.38 mg. oxycodone terephthalate (WARNING: May be habit forming), 224 mg. aspirin, 160 mg. phenacetin, and 32 mg. caffeine.

INDICATIONS For the relief of moderate to moderately severe pain.

CONTRAINDICATIONS Hypersensitivity to oxycodone, aspirin, phenacetin or caffeine.

WARNINGS Drug Dependence Oxycodone can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence and tolerance may develop upon repeated administration of PERCODAN®, and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral narcotic-containing medications. Like other narcotic-containing medications, PERCODAN® is subject to the Federal Controlled Substances Act.

Usage in ambulatory patients Oxycodone may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using PERCODAN® should be cautioned accordingly.

Interaction with other central nervous system depressants Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics or other CNS depressants (including alcohol) concomitantly with PERCODAN® may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced.

Usage in pregnancy Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, PERCODAN® should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

Usage in children PERCODAN® should not be administered to children.

Salicylates should be used with caution in the presence of peptic ulcer or coagulation abnormalities.

PRECAUTIONS Head injury and increased intracranial pressure The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

Acute abdominal conditions The administration of PERCODAN® or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

Special risk patients PERCODAN® should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, and prostatic hypertrophy or urethral stricture.

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ADVERSE REACTIONS The most frequently observed adverse reactions include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients, and some of these adverse reactions may be alleviated if the patient lies down.

Other adverse reactions include euphoria, dysphoria, constipation and pruritus.

DOSAGE AND ADMINISTRATION Dosage should be adjusted according to the severity of the pain and the response of the patient. The usual adult dose is one tablet every 6 hours as needed for pain.

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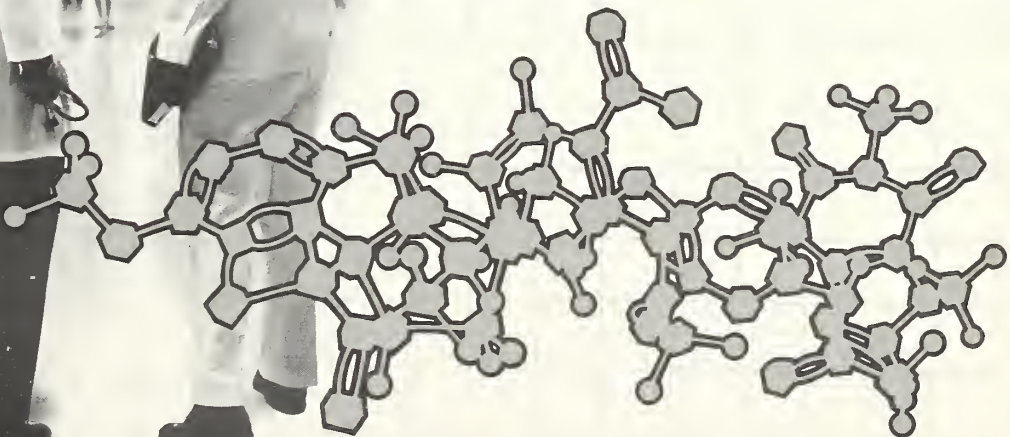
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Letters To The Editor

CLEARINGHOUSE FOR INFORMATION ON CONTINUING MEDICAL EDUCATION FOR PHYSICIANS

The Office of Continuing Medical Education of USDSM has written 12 medically related organizations in South Dakota requesting regular announcements about their educational activities. Hospitals that are accredited by the LCCME to offer programs with Category I credit were included in the list.

Announcement about programs designed for physicians are catalogued, with the exception of routine hospital programs offered primarily for in-house staff. Information received on major programs in contiguous states and major national meetings is also catalogued.

Any department within the University of South Dakota School of Medicine or organization within the state that is planning a program is urged to contact Grace Wratz, Office of Continuing Medical Education (339-7573) to check on potential schedule conflicts before finalizing program dates. The Office of Continuing Medical Education should be informed as soon as dates are selected so that the information can be made available to other interested groups.

D. Marvin Glick, Ph.D.
Director of Continuing
Medical Education
USD School of Medicine



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CRUISE THE CARIBBEAN

Feb. 10-17, 1979

Spend a week on the Caribbean aboard the M/S Southward of the Norwegian Caribbean Line. Visit the exciting ports of Cancun and Cozumel, lovely Grand Cayman Island, Ocho Rios, Jamaica and the breathtakingly beautiful out-islands of the Bahamas. Enjoy an unforgettable week with parties, three great meals a day, a glittering midnight buffet every night, movies, shows etc. Program includes nonstop flight from Sioux Falls to Miami, ground transfers to the ship, shipboard accommodations, all meals and service and entertainment aboard the ship for seven days. From \$879.00 per person/double occupancy plus \$12.00 port taxes.

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Feb. 6-14, 1979

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AUXILIARY NEWS

AUXILIARY WORKSHOP HELD IN SIOUX FALLS

The Fall Workshop and Board of Directors' meeting, October 13 & 14, were well represented by Auxiliary officers and districts at the Downtown Holiday Inn, Sioux Falls. AMA Auxiliary priorities emphasized at the workshop were legislation, health education and voluntarism.

Attending the seminar was Mrs. Leland Olson (Dorothy), national chairman of legislation, Omaha, Nebraska. She discussed national legislation which will have a direct impact on the practice of medicine and the health care of our nation.

Mr. Robert D. Johnson, executive secretary of SDSMA, gave an overview of up-coming legislation on the state level. He stressed the importance of auxiliaries to become knowledgeable both in the content of the bills and to make our opinion known to Senate and House members. He will again be assisting the Auxiliary in planning a two day legislative program in Pierre during the legislative session. Working with Mr. Johnson are Mrs. Bruce Lushbough, state legislation chairman and Mrs. C. L. Swanson, contact person in Pierre.

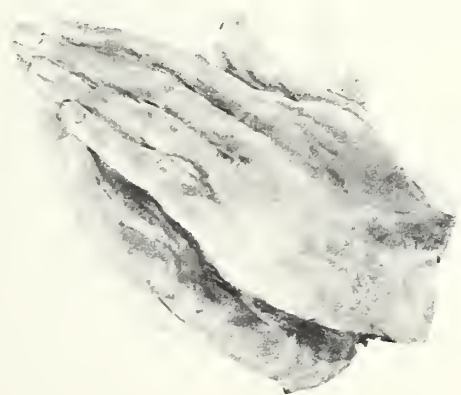
Mrs. Robert Gilliland (Marlene), 7th District

Auxiliary Health Projects chairman, gave a very informative talk on the various health programs available in the community. She spoke specifically of the preventive health care services offered by Sioux Valley Hospital, where she is director of Health Education.

Voluntarism is an integral part of the auxiliary program. Mrs. Russell Orr (Jean) reviewed her work as a volunteer. Mrs. Orr and Mrs. Michael Pekas (Karen) were two of the auxiliaries who were members of the pilot training class of the Extended Family Volunteer, sponsored by the "Child Protection Team" in Sioux Falls. Jean and Karen have for the past two years supervised the nursery held weekly for children at the time their parents are attending the Parents Anonymous meeting.

When we get together in our workshop, we share ideas and concerns and formulate our plans for the coming year. We are dedicated to improving the quality of life for people in our community, state and nation. As physicians' spouses, we do represent medicine in our communities. We sincerely invite suggestions and input from the Medical Association to enable the Auxiliary to better fulfill its purpose—
an Auxiliary to the Medical Association.

Mrs. Robert Van Demark
State Auxiliary President 1978-79



Christmas shows us how much we need God's love. That is why he sent us a Savior. May he minister to you and your family in a special way.

Thank you for making this territory one of the most successful for the Dow Chemical Company during the past twenty-seven years. I look forward to serving you in the years to come.

R. L. "Russ" Bonacker
Medical Service Representative
Dow Pharmaceuticals

This Is Your Medical Association

Paul Reagan, M.D., Sioux Falls, was honored during halftime ceremonies at the Washington-Lincoln high school game for providing medical assistance to these two football teams for thirty years. He has also been school physician for many years and served as a member of the school board for thirteen years.

* * * *

Michael Longo, Jr., M.D., Sioux Falls, has been named Fellow of the American College of Cardiology as announced by **Robert Talley, M.D.**, ACC Governor for South Dakota.

* * * *

The Family Health Center announced the association of **Robert J. Lynn, M.D.** in the practice of general/family medicine with **Carson B. Murdy, M.D.** in Aberdeen. Dr. Lynn is a graduate of the University of Nebraska School of Medicine and served his internship at St. Joseph Mercy Hospital, Sioux City, Iowa. He previously practiced in Edgemont, South Dakota, from 1966 to 1971 and was in Globe, Arizona, prior to coming to Aberdeen. He is a Fellow of the American Society of Abdominal Surgeons.

* * * *

Local speakers at the South Dakota Association of Nurse Anesthetists annual fall meeting in Rapid City included **Charles Tracer, M.D.**, and **Harold Frost, M.D.**, Rapid City.

Robert Ferrell, M.D., Rapid City, has been named a fellow of the American Academy of Facial, Plastic & Reconstructive Surgery. He is the first South Dakota physician named to the academy.

* * * *

Kennon Broadhurst, M.D., Aberdeen, sponsored a seminar entitled, "Now I Have a Pacemaker" for patients in the Aberdeen area who have pacemakers.

* * * *

M. C. Rousseau, M.D., Watertown, and **Earl Kemp, M.D.** and **Lawrence Finney, M.D.**, Sioux Falls, have been named Fellows of the American Academy of Family Physicians.

Eldon Bell, M.D., Webster, has been promoted to Colonel in the Army National Guard Medical Corp. He is currently assigned for guard duty as the surgeon for the 109th Engineering Group, Rapid City.

* * * *

Governor Harvey Wollman announced the appointment of Beverly Hills-Meyer, Pierre, to the South Dakota State Board of Medical and Osteopathic Examiners for a five year term. Other members of the Board are **Michael Rost, M.D.**, Sioux Falls, **G. Robert Bartron, M.D.**, Watertown, **L. L. Massa, D.O.**, Sturgis, **R. C. Jahraus, M.D.**, Pierre, and **Anton Petres, M.D.**, Salem.

* * * *

The South Dakota Medical School Endowment Board of Directors gratefully acknowledges memorials received in memory of the following physicians:

E. J. Batt, M.D.

R. A. Buchanan, M.D.

Joseph Lovering, M.D.

L. E. Savage, M.D.

Robert A. Buchanan, M.D., Huron, died at age 82 following a brief illness. He graduated from the University of Iowa School of Medicine in 1919 and obtained his South Dakota license to practice medicine in 1922. He was a past president of the South Dakota State Medical Association, and a long time member of the South Dakota State Board of Medical and Osteopathic Examiners. Dr. Buchanan is survived by his wife, Helen; one son, Dr. David Buchanan, Huron; one daughter, Mrs. Joyce Vellrichard, Grass Vally, California; nine grandchildren and four great-grandchildren.

COUNCIL MEETING MINUTES

1:00 p.m., Friday, Saturday
October 13, 14, 1978

Holiday Inn Downtown
Sioux Falls, South Dakota

The meeting was called to order by Bruce Lushbough, M.D., Chairman. Those present for roll call included Doctors Russell Harris, Duane Reaney, Winston Odland, Joseph Hamm, William Taylor, Bruce Lushbough, Durward Lang, James Ryan, B. C. Gerber, G. Robert Bartron, R. C. Jahraus, David Buchanan, Richard Gere, W. O. Rossing, John Barlow, Frank Messner, A. J. Barrett, James Wunder, Eldon Bell, R. E. Gunnarson, and student representative, Barbara Bell, and Commission Chairmen, Lawrence Finney, Howard Saylor and T. H. Sattler.

Dr. Buchanan moved to dispense with the reading of the minutes of the previous meeting and approved them as printed. The motion was seconded and carried.

Dr. Bell moved that the Council seat Dr. R. E. Gunnarson as Councilor from the Seventh District to complete the term for Dr. Lang. The motion was seconded and carried.

I. GROUP PURCHASING PROPOSAL. Mr. Robert Smith, executive secretary of the Wyoming Medical Association, presented information on the Western Physicians Purchasing Association. He requested that the SDSMA loan \$12,000 for one year at 7% interest to the Western Physicians Purchasing Association to assist in getting this program established.

Pros

1. Membership would be offered to physicians for \$50 annually as a benefit of State Association membership and could offer savings in supply purchases of up to 50%.
2. Top of the line products will be available.
3. State Medical Association will retain \$8 of each \$50 member fee for administrative and liaison work.
4. Group practices may become members on sliding scale not to exceed \$250 annually.
5. Members may purchase none, some or all supplies through the organization—no minimum purchases required.
6. Tangible benefit of membership.
7. Organization always controlled by the State Medical Associations.
8. Delivery of supplies ordered and payment is made direct between physician and supplier—only the order goes through the organization.

Cons

1. May provide competition for local salesmen and providers.

Dr. Odland moved that the South Dakota State Medical Association join the Western Physicians Purchasing Association and loan this organization \$12,000 at 7% interest for a one year period. The motion was seconded and carried.

II. VOLUNTARY EFFORT. Dr. Gerber briefly reported on meetings of the Voluntary Effort Committee which is comprised of representatives from the State Medical Association and the State Hospital Association. The goal of this committee is to review statistical information on medical care costs and to indicate ways to reduce the rate of increase in physician and hospital rates. This was for the information of the Council, and no action was taken.

III. REPORT OF THE COMMISSION ON MEDICAL SERVICE. Dr. Saylor, Chairman of the Commission, presented this report.

COMMISSION ON MEDICAL SERVICE

9:00 A.M.

Saturday, September 9, 1978

Holiday Inn Downtown
Sioux Falls, South Dakota

The meeting was called to order by Howard Saylor, M.D., Chairman. Those present for roll call were Doctors Saylor, Warren Jones, Guy Tam, Charles Hollerman, Kenon Broadhurst, Anton Petres, C. D. Monson, John Hoskins, Lowell Swisher and Anthony Javurek. Also in attendance were Dr. Russell Harris and Dr. Stephen Haas.

Dr. Tam moved that the minutes of the previous meeting be accepted as published. The motion was seconded and carried.

1. EMERGENCY MEDICAL SERVICE PLAN DRAFT. Dr. Saylor gave an update on the plan drafted by the EMS Department and the advisory committee of which he is a member. He reiterated the difficulties encountered in obtaining reports and returns of questionnaires and urged the Commission members to bring this to the attention of the hospital administrators and chiefs of staffs in their areas. Following discussion **Dr. Jones moved that the Commission recommend to the Council that the State Medical Association accept the Emergency Medical Service Draft Plan. The motion was seconded and carried.**

2. IMPLEMENTATION OF ADVANCED LIFE SUPPORT PROGRAMS (EMS). Dr. Saylor reviewed with the Commission the reasons the West River grant for the Advanced Life Support Program was rejected and stated that he will be meeting with the Department of EMS on September 28 to discuss this matter.

Pros

1. Federal funds are available if South Dakota complies with the federal guidelines.

Cons

1. By agreeing to the plan's implementation as proposed, physicians may be held to it without latitude.
2. Expensive program for South Dakota. (if we do not comply with federal guidelines and plan a state program, the cost would certainly be more.)

The Commission recommended that Dr. Saylor present the following to the members of the EMS Advisory Committee at their meeting on September 28: 1) express the concerns of the hospital administrators (categorization of hospitals may limit or close hospitals especially those in small communities). 2) radio communications network (lack of technicians to keep them in operating condition). 3) express the concerns of the physicians ("suggestions" in the drafted plans may become "regulations" with no latitude for

individual changes). 4) what is the alternative if the EMS implementation plan is rejected.

3. **SOUTH DAKOTA FARM SAFETY COUNCIL.** The Farm Safety Council expressed concern as to membership and active participation in their meetings. It was the Commission's feeling that the State Medical Association should continue its membership and that two physicians, one from the east river and one from the west river, should be appointed to attend meetings and participate in the Council's activities. **Dr. Saylor appointed Dr. Curtis Wait as the east river representative and Dr. Anthony Javurek as the west river representative.**

4. **EMS ACTION BULLETIN.** Dr. Saylor recommended that the Commission members read this bulletin with particular attention to the article regarding California's Proposition 13 and the effect it has on the EMS program in that state.

5. **PRESCRIBING PRACTICES FOR NURSE PRACTITIONERS.** Mr. Johnson reported that the Attorney General released an opinion which would not allow nurse practitioners to prescribe under the current Nurse Practice Act. He also stated that the Health Manpower Physician Subcommittee recommended that nurse practitioners come under the jurisdiction of the South Dakota State Board of Medical and Osteopathic Examiners rather than the Nurses Board. This was submitted for the Commission's information only.

6. **GUIDELINES FOR TRANSFER OF HIGH RISK NEWBORN (EMS PROGRAM).**

Pros

1. Follows the recommendations of the American Academy of Pediatrics.

Cons

1. No available statistical studies indicate that these protocols are relative or warranted in the state of South Dakota.
2. As outlined, there is no latitude for physician judgment regarding transfer of patient.
3. Protocols require that too many patients be transferred (includes both mother and infant)

It was the Commission's feeling that the guidelines as submitted are not acceptable. Dr. Saylor asked that each member of the Commission review the guidelines and send to him directly suggested changes so that these revisions might be considered at the next meeting of the EMS Advisory Committee.

7. **CHILDREN'S COMPREHENSIVE HEALTH CARE SERVICE PROGRAM** (formerly the Crippled Children's Program). The Commission discussed this program briefly with Dr. Stanley Graven and in particular the case where a physician was notified that his services would no longer be covered by the program for a particular case inasmuch as he was not a board certified orthopedic physician. Dr. Graven indicated that these decisions are made by the Advisory Committee which includes four practicing physicians, and that this particular case will be discussed at their next Advisory Committee meeting.

8. **SOUTH DAKOTA PERINATAL PROGRAM.** Dr. Stanley Graven outlined the program in South Dakota, including the statistical data utilized to apply for the federal grant, and the development of the program to date.

Pros

1. Project includes regional care centers, patient education and professional education.

Cons

1. Question as to whether this project answers the problem of getting mothers in for prenatal care.

2. Screening is open to all and at no charge, but may be done only once. Patients accepted must meet income guidelines.
3. Very limited number of patients accepted annually.

2. Expense is difficult to justify.
3. Private practicing physicians have refused to participate in the program.
4. Project was not reviewed by practicing physicians while in the development stage and now they are expected to work with it.

The Commission indicated to Dr. Graven that it is their hope that any new programs or projects will be brought to the attention of the Commission at the time of planning rather than after the fact so that practicing physicians will have input into these programs.

9. **NEONATAL NURSE CLINICIAN PROGRAM.** Dr. Graven gave background information on this program which is operated through South Dakota State University, Brookings.

Pros

1. Nurses with this specialty training are needed in the hospital perinatal nurseries.

Cons

1. Recommendations from physicians concerning this program were completely ignored.

This was submitted for the Commission's information, and no action was taken.

The meeting adjourned at 1:15 p.m.

A. EMERGENCY MEDICAL SERVICE DRAFT PLAN. Dr. Hamm moved that the South Dakota State Medical Association concur with the recommendation of the Commission on Medical Service to accept the Emergency Medical Service Draft Plan. The motion was seconded and carried.

B. ADVANCED LIFE SUPPORT PROGRAM.

Pros

1. Health Department cannot proceed without direction from medical community as to whether this program is acceptable, another program is better or no program is needed.
2. Program goals include a transportation system, adequate care in appropriate centers, communications network and education for paramedical personnel involved.

Cons

1. Fear on part of the physicians and hospitals that acceptance of this program will be too confining for individual situations and determinations.
2. Questionable as to whether this is a cost effective program.
3. With hospital categorization, there is a question of hospital liability in certain instances.

Dr. Odland moved that the South Dakota State Medical Association continue to study and explore ways and means to achieve an advanced life support program which is in the best interest of South Dakota. The motion was seconded and carried.

C. TITLE 19 CLAIM FORM AS PROPOSED BY THE DEPARTMENT OF SOCIAL SERVICES.

Pros

1. Form has been reviewed and approved by the AMA.

Cons

1. Question the section on the back of the form which allows for inspection of patient records by government designees.

Dr. Harris moved that the Council defer action on the

Title 19 claim form. The motion was seconded and carried.

Dr. Rossing moved to approve the report of the Commission on Medical Service as amended. The motion was seconded and carried.

IV. REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE.

COMMISSION ON SCIENTIFIC MEDICINE

September 9, 1978

1:00 p.m.

Holiday Inn Downtown

Sioux Falls, South Dakota

The meeting was called to order by James Larson, M.D., Chairman of the Commission. Present for roll call were Drs. James Larson, A. J. Janusz, Gene Koob, R. R. Thornton, and Aaron Hamvas, medical student. Also in attendance were Dr. Russell Harris, Robert Johnson and Patty Butler.

Dr. Larson moved that the minutes be accepted as printed. The motion was seconded and carried.

Dr. Koob reported on the problems encountered by specialists meeting the required CME accreditations by the South Dakota State Medical Association. He stated that specialists receive their category 1 hours usually from out of state and those expenses have increased astronomically. There are problems from the national level wherein they could go outside the LLCME for accreditation. The Commission discussed small town doctors finding it difficult to leave their practice to attend these seminars. Dr. Janusz stated that category 1 credits could also be attained through taking tests in medical journals. **The motion was made that we have discussed the problems involved for specialists obtaining CME requirements; however, feel that the requirements outlined by the South Dakota State Medical Association are appropriate for those physicians practicing in our state.**

The Commission discussed the reorganization and restructuring of the annual meeting which was referred to them by the Council. The Commission also discussed reasons for the attendance being down at recent annual meetings. The Commission reviewed the evaluations and comments from the 1978 annual meeting scientific programs. The Commission recommended that scientific sessions be held Friday afternoon and Saturday morning. The following scientific schedule is recommended to the Council for consideration of the 1979 annual meeting to be held at Rapid City, South Dakota:

FRIDAY, June 8

1:00 p.m.-1:45 p.m.

Sports Medicine

Dr. James Garrick

1:45 p.m.-2:30 p.m.

Head and Neck Trauma

Dr. Edward James or
Dr. Gonzalo Sanchez

2:30 p.m.-2:45 p.m.

Coffee Break

2:45 p.m.-3:30 p.m.

Dermatology

Dr. Eugene Hoxtell or
Dr. Dennis Knutson

3:30 p.m.-4:15 p.m.

Nutrition, Exercise and
Heart Disease

Dr. Henry Blackburn

4:15 p.m.-5:00 p.m.

Forensic Medicine

Dr. Thomas Henry

SATURDAY, June 9

9:00 a.m.-9:45 a.m.

Eneuresis

Dr. John Hoskins or
Dr. Allan Hartzell

9:00 a.m.-9:45 a.m.

Preselection of Patient for
Cesarean Section

Dr. Richard Hockett

9:45 a.m.-10:00 a.m.

Coffee Break

10:00 a.m.-10:45 a.m.

Breast Cancer

Dr. Kiang

10:00 a.m.-10:45 a.m.

The Need, Potential and Strategy
for Heart Disease Prevention

Dr. Henry Blackburn

10:45 a.m.-11:30 a.m.

Preseason Evaluation of
Student Activities

Dr. James Garrick

10:45 a.m.-11:30 a.m.

Elective Induction of Labor

The meeting adjourned at 4:30 p.m.

Dr. Barlow moved that the Council approve the report of the Commission on Scientific Medicine. The motion was seconded and carried. The Council recommended that the workshops be rearranged so that the two out of state guest speakers not speak at the same time.

A. ANNUAL MEETING ENTERTAINMENT. Mr. Johnson proposed that the format be changed so that Friday evening be open and during this time the Auxiliary could, if they wish, have an AMA-ERF fund raising function; that the awards be presented during the First House of Delegates meeting; and that the Saturday evening banquet include top entertainment, a brief address by the president and be set up in a night club format. **Dr. Taylor moved that the executive secretary proceed to arrange the 1979 annual meeting entertainment functions as outlined. The motion was seconded and carried.** One dissenting vote was recorded.

V. REPORT OF THE COMMISSION ON INTERNAL AFFAIRS, COMMUNICATIONS AND LIAISON. Dr. Finney presented this report as Chairman of the Commission.

COMMISSION ON INTERNAL AFFAIRS, COMMUNICATIONS AND LIAISON

September 7, 1978

1:30 p.m.

Holiday Inn Downtown

Sioux Falls, South Dakota

The meeting was called to order by Lawrence Finney, M.D., Chairman of the Commission. Present for roll call were Drs. L. W. Finney, C. B. Gwinn, Harold Fletcher, Arlan Zastrow, and R. E. Van Demark. Also in attendance were Bob Johnson and Patty Butler.

The minutes from the previous meeting were read by Bob Johnson and accepted by the Commission.

Bob Johnson reported on the physician recruitment program for South Dakota. There were 842 questionnaires sent in July and August to doctors in residency programs in six surrounding states, and the response was as follows: twenty were interested in locating in South Dakota and two had no interest in locating here. The Commission recommended that another report be presented to them concerning returns before any action is taken.

Three representatives from I.C. Systems, Inc., a collection agency, described their program and services along with a film. A question and answer period followed the showing of the film. The Commission expressed favorable feelings towards this program. **Dr. Gwinn moved that the commission recommend to the Council the endorsement of program of I.C. Systems, Inc. by the South Dakota State Medical Association. The motion was seconded and carried.**

The Commission discussed the House of Delegates' recommendation that the Commission define the composition of the Budget and Audit Committee. The motion was made that the composition of the Budget and Audit Committee be the Executive Commission and Chairman on Internal Affairs, Communications and Liaison. The motion was seconded and carried.

The appointment of a subcommittee to review the Bylaws prior to the spring 1979 meeting of the Commission was discussed. A motion was made that the Bylaws be sent to the members of the commission and then discussed at the spring meeting. The motion was seconded and carried.

A film was shown entitled **Healthcaring—From Our End of the Speculum** by the Commission on the Status of Women along with the health care task force of the Commission on the Status of Women. The executive office had received a complaint from an individual who had seen this film and felt it was extremely biased against physicians and should not be shown throughout the state utilizing state government monies to present it. A discussion period was held with five women representatives after the showing of the film. The Commission recommends that the Council give consideration to commending the Commission on the Status of Women for establishing their stated objective of trying to improve the knowledge of women on health care matters and thereby improving the health care of women in South Dakota. However, the Commission on Internal Affairs, Liaison and Communications does not feel that this stated objective will be served at all by the means they have selected—i.e.: the showing of this film. The film contains portions that are inaccurate, misleading and objectionable because of the offensive nature in which the material is presented. Because of these facts, the film could potentially do more harm to the goals of the Commission on the Status of Women than it would do good. The Commission on Internal Affairs feels there is little to be gained by confrontation, but because of the grossly inaccurate sections of this film, it should not be shown. The Commission recommends that the Council take appropriate action to call to the attention of the proper state bodies their concern about the showing of this film by the Commission on the Status of Women.

The meeting adjourned at 4:45 p.m.

A. I. C. SYSTEMS, INC. PROPOSAL FOR COLLECTION SERVICES.

Pros

1. Benefit for members of the State Association—charge a lower rate than many collection services.
2. State Association would realize income from the members who wish to use this collection service (10% of member fee).
3. Utilizes up to date computer collection method.
4. Employs their own legal counsel to keep up to date on collection laws.
5. SDSMA members individually decide whether or not to use collection service.

Cons

1. Previous Council action taken not to endorse any collection service.

Dr. Odland moved that the South Dakota State Medical Association allow I. C. Systems, Inc. to send letters to

SDSMA members indicating that while it is not the policy of the SDSMA to endorse commercial products or services, the Council has given its approval to providing information about I. C. Systems to our members. The motion was seconded and carried. One dissenting vote was recorded.

B. COMPOSITION OF THE BUDGET AND AUDIT COMMITTEE. Dr. Buchanan moved that the composition of the Budget and Audit Committee be the members of the Executive Commission and the Chairman of the Commission on Internal Affairs, Communications and Liaison. The motion was seconded and carried.

C. FILM SPONSORED BY THE COMMISSION ON THE STATUS OF WOMEN.

Pros

1. Recognize the intent to make women more aware of and knowledgeable about their own health.

Cons

1. Extremely uncomplimentary about doctors.
2. Inaccurate statements made about medical care.
3. Film was reviewed by the Commission members and found to contain many inaccurate statements and doubtful that it will fulfill the intent of the Commission on Status of Women.
4. Underwritten by government funds.

Dr. Taylor moved that the Council concur with the recommendations of the Commission commending the Commission on the Status of Women for establishing their stated objective of trying to improve the knowledge of women on health care matters; however, noting the many inaccurate, misleading and objectionable portions of the film, and therefore recommending the film not be shown and notifying the proper state bodies of the physicians' concerns regarding this film. The motion was seconded. Dr. Gerber moved to amend the motion to state that the SDSMA notify the appropriate state body of their opinion regarding this film and suggest that the appropriate place to show this film would be to medical students and physicians rather than to the lay public. The motion was seconded and defeated. Dr. Bartron moved to table this item. The motion was seconded and carried.

Dr. Barrett moved to approve the report of the Commission on Internal Affairs, Communications and Liaison as amended. The motion was seconded and carried.

VI. REPORT OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS.

COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

1:00 P.M.

Saturday, September 9, 1978

Holiday Inn Downtown

Sioux Falls, South Dakota

The meeting was called to order by Stephen Haas, M.D., Chairman. Those present for roll call were Doctors Haas, Ronold Tesch, Robert McGee, Bill Church, L. W. Karlen, R. B. Henry, J. B. Gregg and student representative, Scott Huckins. Also in attendance was Dr. Russell Harris.

Dr. Church moved to approve the minutes of the previous meeting as published. The motion was seconded and carried.

1. COUNCIL ACTION ON THE HOSPITAL RATE REVIEW LAW. This was provided to the Commission for their information. Dr. Church moved that the Commission recommend continued opposition to the Hospital Rate Review Law if it is introduced in the 1979 legislative

session. The motion was seconded and carried.

2. COUNCIL ACTION ON OPTOMETRY LEGISLATION. This was provided to the Commission for their information. It was noted that the Ophthalmology Society would be meeting on September 16 to establish a position regarding optometry legislation. Dr. Church moved that the Commission defer any action regarding optometry legislation until after the Ophthalmology Society meets and then the Commission recommend to the Council that the State Medical Association concur with the recommendation of the Ophthalmology Society. The motion was seconded and carried.

3. NURSE PRACTICE ACT—PHYSICIAN ASSISTANT LAW. The Commission discussed the two laws which are administered by two separate boards and which regulate the practices of nurse practitioners and physician assistants.

Pros

1. According to attorney general ruling nurse practitioners cannot prescribe under the present Nurse Practice Act.

Cons

1. Possibility of nurse practitioners establishing independent practices.
2. Attempt to establish various levels of nursing.

Dr. Gregg moved that the Commission Chairman appoint a subcommittee to study these two laws and make recommendations to the Commission at its next meeting in December. The motion was seconded and carried. Dr. Haas appointed Dr. Gregg as chairman of this subcommittee and Dr. Tesch and Dr. McGee as members.

4. STATUTE OF LIMITATIONS BILL FOR MEDICAL CORPORATIONS. Dr. Haas stated that in a recent court case the court ruled that the present statute of limitations bill is applicable to physicians but not to medical corporations; therefore, State Association legal counsel was asked to draft legislation which would cover medical corporations. Dr. Gregg moved that the Commission recommend to the Council that the proposed statute of limitations bill be introduced into the 1979 Legislature. The motion was seconded and carried.

5. LETTER FROM DR. E. H. HEINRICHS. The Commission reviewed a letter from Dr. Heinrichs which outlined a number of items pertaining to children which may be introduced into the 1979 Legislature. Dr. Gregg moved that the Commission accept the letter from Dr. Heinrichs for information only. The motion was seconded and carried.

6. BLUE SHIELD REIMBURSEMENT FOR PHYSICIAN EXTENDER SERVICES. The Commission reviewed a letter from Blue Shield indicating they are opposed to reimbursement for physician extender services; however, there is an effort by some rural health clinics to mandate such reimbursement.

Pros

1. Helps underwrite the cost of the rural health clinics.

Cons

1. May promote allied health personnel to become independent practitioners.

Dr. Gregg moved that the Commission accept the information from Blue Shield for information only. The motion was seconded and carried.

7. NATIONAL LEGISLATION TO ESTABLISH A FEDERAL MEDICAL TECHNOLOGY CENTER. Dr. Church reported that legislation allowing federal control in the development of medical technology has passed the Senate and has been introduced into the House. He urged members of the Commission to contact their representative and express the physicians' concerns and request they oppose such legislation. He also expressed his concern that Commission members are not aware of national legislation and when to take appropriate stands for or against proposed

legislation. Dr. Church moved that the executive office disseminate to the Commission on Legislation information on urgent issues which confront the medical profession when national legislation is pending. The motion was seconded and carried.

8. PROPOSED CHANGES IN THE MEDICAL PRACTICE ACT. The Commission reviewed a proposal to change the Medical Practice Act to increase the fee for licensure by examination to not more than \$200 and to eliminate the special examination in osteopathic medicine for doctors of osteopathy. Dr. Gregg moved that the Commission recommend that the State Medical Association support changes in the Medical Practice Act which concur with the recommendations of the South Dakota State Board of Medical and Osteopathic Examiners. The motion was seconded and carried.

9. NURSE AIDES DISPENSING MEDICATIONS. Dr. Harris discussed concerns about the recently passed law which allows nurse aides to dispense medications. Mr. Johnson stated that the Medical Association did testify in the House committee against this bill. Following discussion, the Commission decided no action is necessary at the present time inasmuch as there is no indication legislation will be introduced to rescind this law.

10. MEETING WITH REPRESENTATIVES OF THE DEPARTMENT OF SOCIAL SERVICES. Mr. Erv Schumacher and Mr. Art Fecht met with the Commission and discussed the MMIS program which is a computer system for the management of the welfare program in South Dakota and other items of mutual concern to the Department and the practicing physicians.

Pros

1. Provides better control over ineligible recipients.
2. Better detection of fraud and abuse, duplicate payments.
3. Allows more time for the Department to prepare budget information and requirements.
4. Save the Department of Social Service money (approximately \$20,000 annually)
5. Speed up turn around time in claims payment.
6. Will allow individual tracking of prescriptions.

Cons

1. Federal program which requires federal approval before implementation.
2. Collects more data on patients and providers.
3. One more step toward national health.
4. Possibility that checks will be carried out to see that the diagnosis matches the services rendered.
5. Problem with the confidentiality on records (federal personnel have access to all records).
6. This will require a new claim form.

Mr. Schumacher stated the Department would submit to the Association a proposed claim form for review and recommendation prior to the beginning of this program. He stated that the program is scheduled to begin in January 1980, and that while it will cost the state approximately \$100,000 to get the system established, the majority of the funding will come from the federal government. The Commission accepted this for information and requested they be kept informed of new developments.

MEDICAID REIMBURSEMENT LEVELS

Mr. Schumacher stated that as of September 1, 1978, the Medicaid reimbursement level has been increased to the 1975 level. He stated that if the Legislature appropriated additional funds the reimbursement level could be increased to an amount not to exceed that allowed under the Medicare program.

NEW MEDICAID PROVIDER AGREEMENTS

Pros

1. One form which can be used by all providers.

Cons

1. Question on the reference to the Rehabilitation Act, Section 504.

2. Allows an audit of the provider.

The State Association's attorney is reviewing this provider agreement, and after his comments and recommendations are received this information will be provided to the physicians in South Dakota.

PHYSICIAN CONSULTANT FOR THE DEPARTMENT OF SOCIAL SERVICES AND INCREASED FUNDING FROM THE LEGISLATURE FOR THE DEPARTMENT. Mr. Schumacher requested the Association's assistance in obtaining additional funding from the Legislature to hire a full-time physician consultant for the Department and to increase the reimbursement to physicians for the Medicaid program. Following discussion, **Dr. Church moved that the Commission recommend that the State Medical Association take no position regarding the request for increased funding for the Department of Social Services. The motion was seconded and carried.**

11. MEDICAL SCHOOL FUNDING. Mr. Johnson reported that the Medical School will seek additional funding from the Legislature to keep up with inflation. Information was not available as to how any increased funding would be allocated. **Dr. Church moved that the Commission defer action on this to the Council due to a lack of adequate information. The motion was seconded and carried.**

12. RESIDENCY FUNDING. Information was received that increased funding will be requested for the residency programs from the Legislature. It was also noted that difficulties in dividing present funds have arisen. **Dr. Tesch moved that the Commission take no action regarding a request for increased funding at the present time. The motion was seconded and carried.**

13. CONSTITUTIONAL AMENDMENT LIMITING FEDERAL DEFICIT SPENDING. The Commission received a letter from the Georgia Medical Association requesting support for such a constitutional amendment. **Dr. Gregg moved that the Commission recommend that the State Medical Association endorse the concept proposed by the Georgia Medical Association. The motion was seconded and carried.**

14. LETTER FROM SOUTH DAKOTA TAXATION ASSOCIATION FOR LEGISLATION. This group is requesting support from the State Medical Association to pass legislation limiting state government spending. **Dr. Gregg moved that the Commission recommend that the State Medical Association indicate its interest in this type of legislation and request that when final legislation has been drafted a copy be submitted to the State Association for review and action. The motion was seconded and carried.**

The meeting adjourned at 5:15 p.m.

A. HOSPITAL RATE REVIEW LAW. **Dr. Ryan moved that the Council concur with the Commission's recommendation to oppose a Hospital Rate Review Law if it is introduced in the 1979 Legislature. The motion was seconded and carried.**

B. OPTOMETRY LEGISLATION. Mr. Johnson reported the Ophthalmology Society was not prepared to report to the Council at this time and will do so at a later date. **No action was taken.**

C. STATUTE OF LIMITATIONS BILL FOR CORPORATIONS. **Dr. Taylor moved that the Council accept the recommendation of the Commission to draft and introduce a statute of limitations bill for corporations into the 1979 Legislature. The motion was seconded and carried.**

D. AMENDMENTS TO THE MEDICAL PRACTICE

ACT. **Dr. Barrett moved that the Council accept the recommendations of the Commission to endorse changes in the Medical Practice Act which would increase the fee for licensure by examination to not more than \$200 and would eliminate a special examination in osteopathic medicine for doctors of osteopathy. The motion was seconded and carried.**

E. TITLE 19 CLAIM FORM AS PROPOSED BY THE DEPARTMENT OF SOCIAL SERVICES.

- | Pros | Cons |
|--|--|
| 1. Form has been reviewed and approved by the AMA. | 1. By signing the form, government reimbursement agents may review office records. |
| | 2. By signing, physicians agree to comply with the law for providing services to the handicapped; interpretation is vague. |
| | 3. Department of Social Services need 50% physician participation in order to get continued funding. (HEW has not withdrawn funds in states where 50% participation has not been met.) |
| | 4. Previous agreement in effect. |

Dr. Odland moved that the executive secretary of the State Medical Association meet personally with representatives of the Department of Social Services to discuss this matter. The motion was seconded and carried.

Dr. Bell moved to approve the report of the Commission on Legislation and Governmental Relations as amended. The motion was seconded and carried.

VII. MEDICAL SCHOOL FUNDING. USD President Charles Lein addressed the Council, thanked the physicians for their support in establishing the Medical School and requested their continued support, individually and collectively, for the continuation and expansion of the Medical School. He stated that the Medical School is requesting a \$920,000 appropriation from the Legislature and that such appropriation has been approved by the Board of Regents. This appropriation would allow for the inflationary increments which have not been met since the school was established as a four year degree granting school, and which were provided for by the Legislature at the time the bill establishing the school was passed. **No action was taken at this time.**

The Council recessed at 5:15 p.m. and reconvened at 9:30 a.m., Saturday, October 14.

VIII. REPORT OF THE LONG RANGE PLANNING COMMITTEE. **Dr. Sattler, Chairman of the Committee, presented this report.**

LONG RANGE PLANNING COMMITTEE

**July 11, 1978
1:30 p.m.**

**Howard Johnson Motor Lodge
Sioux Falls, SD**

The meeting was called to order at 1:30 p.m. by Dr. T. H. Sattler, chairman of the committee. Present for roll call were Drs. Sattler, E. H. Heinrichs, Michael Pekas, W. N. Guddal, and C. E. Tesar. Also in attendance were Jerry Maginn and Patty Butler.

Dr. Heinrichs moved that the minutes of the previous meeting be accepted as prepared. The motion was seconded and carried.

I. GERIATRICS—GERONTOLOGY PROGRAM

Jeanette Dolezal of the Community and Family Medicine Department of the USD School of Medicine discussed the program which is being developed at the School of Medicine.

Pros

1. A unique program in United States.
2. Most programs are elective in U.S.
3. Geriatric population increasing.

Cons

1. Students encounter death among senior citizens often.
2. Course should include introduction to geriatrics.
3. Should include counseling for students to avoid depression.

ACTION: Dr. Pekas moved that the Long Range Planning Committee endorse the concept of the plan as outlined and urge that the School of Medicine implement the program in the curriculum as discussed; that the Long Range Planning Committee be kept informed of the development of this project. The motion was seconded and carried.

The Committee discussed the establishment of an ad hoc committee to pursue the question of geriatrics from the medical care aspect. Dr. Heinrichs moved that the ad hoc committee be established; that a list of names be submitted to Dr. Harris, President of SDSMA, for approval after the Long Range Planning Committee has prepared such a list to include individuals from outside the profession who are involved in geriatric medical care. The motion was seconded and carried.

II. IDENTIFIED PROBLEMS

The Committee reviewed the listing of identified problems and actions taken by the Council concerning the specific items.

A. 5 YEAR PLAN FOR PUBLIC HEALTH NURSES

ACTION: Dr. Heinrichs moved that the Long Range Planning Committee request a copy of this plan from Robert Chloupek, M.D. of the State Health Department for the review of the Committee; that the Committee seek additional information on the plan from Dr. G. E. Tracy. The motion was seconded and carried.

B. IMPROVED PREGNANCY OUTCOME PROGRAM

ACTION: Dr. Heinrichs moved that the Long Range Planning Committee receive the action of the Commission on Medical Service regarding this program. The motion was seconded and carried.

C. HOSPITAL RATE REVIEW LEGISLATION

ACTION: Dr. Heinrichs moved that the Long Range Planning Committee indicate that they feel it is important for continued study such as the LRC Committee on Hospital Cost Containment and Rate Review Legislation, and that Robert Johnson provide an update of the LRC hearings at the next meeting. The motion was seconded and carried.

D. MEDICAL STAFF AND BOARD CONFLICTS

ACTION: Dr. Heinrichs moved that each member of the Long Range Planning Committee be provided with recent information from the AMA on Hospital Board Medical Staff relationships. The motion was seconded and carried.

E. NHI. A discussion was held on NHI.

ACTION: Dr. Tesar moved that the Long Range Planning Committee recommend that a coordinated program for catastrophic illness be developed by the appropriate Commission utilizing the legislative process, educational process and insurance carriers. The motion was seconded and carried.

F. HEALTH CARE DELIVERY IN RURAL AREAS

ACTION: Dr. Tesar moved that the SDSMA should work to develop alternatives and ground rules for future utilization of hospital beds in South Dakota which would be financially efficient. The motion was seconded and carried. The Long Range Planning Committee indicated that this

subject might be explored by the Liaison Committee with the Hospital Association.

G. HMO. A report on the activities in South Dakota regarding Health Maintenance Organizations was made.

ACTION: Dr. Heinrichs moved that the Long Range Planning Committee recommend that the South Dakota State Medical Association pursue the possibility of a grant to study the feasibility of an HMO of any type within the State of South Dakota. The motion was seconded and carried. This grant would compile data on an area beyond those covered in existing studies.

H. HSA. Mr. Maginn reported on the activities of the HSA to date. The Committee determined that the next meeting would be held on November 14.

I. STATE MEDICAL ASSOCIATION STRUCTURE

ACTION: Dr. Tesar moved that the Long Range Planning Committee ask the Council of the South Dakota State Medical Association to restudy the District Society structure. The motion was seconded and carried. It appears that there would be considerable benefit from realignment and consolidation of the District Medical Societies comprising the South Dakota State Medical Association. These benefits would include the Continuing Medical Education Program improvements; increase in the size of the Districts; more input from physician members, and better communications between members, the Districts, and the State Association.

The meeting adjourned at 4:15 p.m.

A. HMO GRANT APPLICATION FOR FEASIBILITY STUDY.

Pros

1. Federal funds available for feasibility studies (allows for gathering of data and statistics not now available).

Cons

1. Changes pattern of physician-patient relationship.
2. Directed to those groups who can pay (not to the poor) and to the healthier segment.
3. Feasibility study done in Rapid City and one being done in Sioux Falls. (information is available from these two studies).

Dr. Ryan moved that the State Medical Association not apply for an HMO feasibility grant. The motion was seconded and carried. Dr. Barrett moved that if requested by the Sioux Health Maintenance Study Group Foundation, a member of the State Medical Association staff be permitted to participate as a non voting member on the advisory board for the HMO. The motion was seconded and carried.

Dr. Buchanan moved to approve the report of the Long Range Planning Committee as amended. The motion was seconded and carried.

IX. MATERNAL AND CHILD HEALTH PROGRAM.

Pros

1. Federal law mandates that each state have a program in order to get federal funds for other programs.

Cons

1. Rapid City program has actively solicited patients.
2. Program brings in specialists in areas where the communities' needs have been met privately.
3. Program was rejected by the Indian Bureau so it was situated in Rapid City.
4. Program starting in Pierre and will be in every town of size in South Dakota in the near future.

Dr. Harris stated he has discussed this program and the problems involved with the Secretary of Health, Dick Blair, and they have agreed to appoint a committee jointly to evaluate the Maternal and Child Health Program and make recommendations to the Department of Health. **No action was taken by the Council.**

X. NURSE PRACTITIONERS AND PHYSICIAN ASSISTANTS. Mr. Johnson stated it is his understanding that legislation will be introduced which will allow one physician to supervise up to four physician assistants on a full time basis. **Dr. Barrett moved that the State Medical Association adopt policy stating that inasmuch as the number of physician extenders in South Dakota is limited and there is not sufficient information on the experience of physician supervision of such extenders, the State Medical Association feels the present law which allows one physician to supervise two physician assistants is satisfactory at the present time. The motion was seconded and carried.**

XI. CONTINUING EDUCATION REQUIREMENTS FOR NURSES TO MAINTAIN LICENSE.

- | Pros | Cons |
|---|---|
| 1. Continuing education is necessary for continued good nursing care. | 1. Program is mandatory and not voluntary. |
| | 2. Hospital Association is opposed to this program. |
| | 3. Nurses Association is promoting this program; however, they have a membership of less than 10% of all nurses in the state. |

The Council expressed concern that the continuing education requirements be mandatory but took **no action at this time.**

XII. HONORARY LIFE MEMBERSHIP FOR JOHN MCGREEVY, M.D. Dr. Lang moved that the Council approve honorary life membership in the State Medical Association for Dr. John McGreevy. The motion was seconded and carried.

XIII. MEDICAL ASSOCIATION PARTICIPATION IN THE JOINT PRACTICE COMMISSION. Dr. Lang, who is a SDSMA representative on the Joint Practice Commission, discussed physician participation in recent Commission meetings.

- | Pros | Cons |
|---|--|
| 1. Original objective was to provide physician advice in nursing situation decisions. | 1. Commission is advisory only and has no real authority. |
| | 2. Board of Nursing has rejected recent physician recommendations. |

Dr. Taylor moved that the Council support the judgment of the current physician members of the Commission and the executive secretary as to whether or not the State Medical Association should continue to participate in Joint Practice Commission activities. The motion was seconded and carried.

XIV. MEDICAL SCHOOL STUDENTS' V. D. PROGRAM. Dan Heineman and Peter Kolbeck, USDSM students, presented information on their program which is addressed to junior and senior high students in South Dakota. They requested the endorsement of the State Medical Association for this program.

- | Pros | Cons |
|---|--|
| 1. Last year they carried out 19 programs which | 1. Some schools prohibit the distribution of in- |

- | | |
|---|-----------------------------|
| reached 4200 students. | formation on birth control. |
| 2. This is a voluntary program on the part of the medical students. | |
| 3. State Health Department has provided some funding and assistance to the students. | |
| 4. Program consists of film, slide presentation and small group sessions for questions and answers. | |
| 5. Well received by students. | |

Dr. Reaney moved that the State Medical Association endorse the V. D. Program established by the Medical School students and commend them for their efforts. The motion was seconded and carried.

XV. SOUTH DAKOTA HUMAN SERVICE BUDGET. Dr. Myrick Pullen presented information on the proposed budget for 1980 for the Human Service Center and asked for the State Medical Association's endorsement of a \$1.1 million increase.

- | Pros | Cons |
|---|------|
| 1. Need increase to meet minimal national standards for psychiatric facilities in the U.S. (JCAH) | |
| 2. Correct staffing deficiencies as indicated by Department of Health inspections. | |
| 3. Upgrade hospital facilities. | |
| 4. Establish specialized adolescent treatment program. | |

Dr. Ryan moved that the State Medical Association endorse the budget request as outlined for the South Dakota Human Service Center. The motion was seconded and carried.

XVI. GRIEVANCE COMMITTEE REPORT REGARDING IMPAIRED PHYSICIANS PROGRAM. Dr. Sattler, Chairman of the Grievance Committee, reported that the Grievance Committee has accepted the charge of the Council to establish an Impaired Physicians Program for South Dakota. He stated the Committee will meet in the near future to begin planning such a program and will report to the Council at a later date. **Dr. Barlow moved that the Council acknowledge the Grievance Committee's acceptance to establish an Impaired Physicians Program. The motion was seconded and carried.**

XVII. LEGISLATIVE RESEARCH COUNCIL ON COST CONTAINMENT. Mr. Johnson reported that the final LRC meeting will be held October 23. To date it does not appear that legislation will be drafted pertaining to the restriction of physician charges. This was for the information of the Council, and **no action was taken.**

XVIII. REPORT OF THE EXECUTIVE COMMISSION. Dr. Harris presented the report to the Council.

EXECUTIVE COMMISSION July 12, 1978

Following adjournment of the joint meeting with the South Dakota Hospital Association, the Executive Commission of the State Medical Association met briefly. Those present included Doctors Russell Harris, Duane Reaney, Winston Odland, Joseph Hamm, Durward Lang and James Ryan.

1. Dr. Hamm pointed out to the Executive Commission that the Medical School would once again be reapplying for a federal grant for an AHEC in South Dakota. This was for the information of the Executive Commission only.

2. **SECOND SURGICAL OPINIONS.** Mr. Johnson reported to the Executive Commission on the meeting of the Ad Hoc Committee of the South Dakota Foundation for Medical Care which considered the proposed second opinion program by Secretary Califano. It was pointed out to the Executive Commission both by the Ad Hoc Committee and by Dr. Ryan and Mr. Johnson who met with the Ad Hoc Committee, that at the present time Mr. Califano's request for a second opinion program is very loose in nature and essentially would require that an In Wats line be installed and patients be given the names of physicians who would be willing to give second opinions if so requested by the patients. **Following lengthy discussion the Executive Commission recommended that the Ad Hoc Committee prepare a proposal to be sent to HEW, such proposal to have either the Foundation for Medical Care or the Medical Association as a subcontractor performing a second opinion program. It was the consensus of the Executive Committee that such a program not be encumbered by many technicalities. This recommendation was approved with one dissenting vote (Dr. Odland).**

3. Mr. Johnson discussed with the Executive Committee the need for an additional private office in the Foundation quarters at the Association building. **The Executive Commission authorized Mr. Johnson to obtain bids and to proceed with the construction assuming that the total outlay not exceed \$1,000.**

4. Mr. Johnson reported to the Executive Commission that during the LRC interim hearings on cost containment Mr. William Murphy, employed by Blue Cross of Sioux City, Iowa, made comments concerning an HMO which had been started in Iowa. In the course of Mr. Murphy's comments he stated that if an HMO is to be effective, you must put the physicians at risk. He further stated, if you allow physicians to charge in the present fee for service manner, there is not a large enough pot of money to fill the desires of the medical community. His course of testimony concerning HMOs, the Iowa HMO in particular, was very derogatory to the fee for service system, and in fact made accusations about the medical community which in Mr. Johnson's opinion were unwarranted. **The Executive Commission instructed Mr. Johnson to draft a letter to Mr. Don Happe, Sioux City Blue Cross, calling to his attention the statements made by Mr. Murphy and expressing the Association's displeasure with such inaccurate and uncalled for statements by an employee of his organization. The Executive Commission also indicated that copies of this letter should be distributed to the appropriate Blue Cross Board members and others involved.**

5. Dr. Harris reported to the Executive Commission concerning a letter received from Richard Blair, Secretary of Health. **Dr. Harris and the Executive Commission requested that the executive office draft a letter which could be sent to Mr. Blair indicating that the Medical Association feels it only appropriate that they be involved in the development, planning and delivery of any programs promulgated by the Department of Health or any programs developed for the Department of Health by other state agencies. This letter was to be circulated to the Executive Commission prior to its being sent to Mr. Blair.**

There being no further business the meeting adjourned.

EXECUTIVE COMMISSION MINUTES CONFERENCE CALL August 7, 1978

The Executive Commission of the South Dakota State Medical Association met via a conference call on August

7, 1978, at 3:00 p.m. to discuss implementation of the Second Opinion Consultation Program for the state of South Dakota. Those present were Drs. D. B. Reaney, W. B. Odland, B. C. Lushbough, Joseph Hamm, D. M. Lang, James Ryan, Mr. Robert Johnson, and Mr. David Remillard. Excused was Dr. Russell Harris.

Robert Johnson discussed the background information on Secretary Califano's move to have the Second Opinion Consultation Program in effect by September 1. The ad-hoc committee's proposed plan was forwarded to the members of the Executive Commission. Members of the ad-hoc committee are Drs. James Ryan, E. F. Kalda, Chester McVay, and Howard Saylor.

Doctor Ryan, reporting on behalf of the ad-hoc committee, discussed that the committee felt if a Second Surgical Opinion Program was implemented in South Dakota it should be supervised by an organization controlled by physicians. Doctor Ryan also stated that the ad-hoc committee voted unanimously in favor of the proposal for Second Opinion Consultation.

Because Second Opinions have always been available to the patients in South Dakota through normal channels, it was the opinion of the Executive Commission that a federally funded program in South Dakota would not bring about improvement in the quality of medical care for patients of our state. Secretary Califano's proposal will only be a waste of valuable tax dollars for a program that will not improve the quality of care, or assessability of care, but will add substantially to the cost of medical care to all South Dakotans. **Because of the well-established and successful program presently operating in South Dakota for Second Opinion Consultation and because of the wasteful nature of this federal project, Dr. W. B. Odland made the motion that the South Dakota Medical Association decline participation and that its sentiments be forwarded to Secretary Califano.**

Doctor Odland further moved that the Executive Commission's recommendation on Second Opinion Consultation would not preclude the South Dakota Foundation for Medical Care or any other organization from submitting a proposal to carry out Secretary Califano's program. Such motion was seconded and unanimously carried.

Meeting adjourned at 4:00 p.m.

A. SECOND SURGICAL OPINION PROGRAM.

Pros	Cons
1. Provides a referral list to patients.	1. Second opinions are available at the present time in S.D.
	2. Experience in other states appears to be very poor—not cost effective.
	3. HEW program—originally provided no funds—now will accept proposal of the Foundation.
	4. S.D. Blue Shield refused to provide this service.

Dr. Odland moved that the State Medical Association not endorse the HEW program for second surgical opinions for the reasons stated in the minutes of the conference call of the Executive Commission. The motion was seconded and carried.

Dr. Buchanan moved to approve the report of the Executive Commission as presented. The motion was seconded and carried.

XI. REPORT OF THE USD SCHOOL OF MEDICINE. Dr. Charles Hollerman, acting dean of the school, presented a report for the Council including information on the creation of a Division of Surgery, a report on requirements

for medical students to complete the National Board exams and the results of the exams given to date, the upcoming North Central accreditation visit and the LCME site visit, notification that the AHEC grant was awarded to the USDSM for \$6.6 million for an eight year period, and a review of the request for \$820,000 funding for the Medical School plus \$100,000 for fringe benefits from the 1979 Legislature. **Dr. Taylor moved that the State Medical Association endorse the budget request for the School of Medicine. The motion was seconded and carried.**

XX. MEMBERSHIP BENEFITS. Mr. Johnson stated that a proposal is being drafted which would allow specialty societies and district medical societies to utilize the state executive office and facilities for those societies on an hourly pay basis. **No action was taken.**

XXI. NORTH DAKOTA INITIATED MEASURE. Mr. Johnson briefly reported on the North Dakota initiated measure which would allow the state health officer to set maximum charges on health services available in North Dakota. For the information of the Council.

XXII. WAGE AND PRICE CONTROLS. Mr. Johnson read a statement from the AMA which indicates the President does not have the authority to institute wage and price controls and will not do so despite rumors to this effect. For the information of the Council.

XXIII. SUNSET HEARING ON THE BASIC SCIENCE BOARD. Mr. Johnson reported that a sunset hearing has been held for the Basic Science Board and another hearing is anticipated in the near future. **Dr. Odland moved that the State Medical Association reaffirm its position regarding continued support for the Basic Science Board as a deterrent to quackery and cultist activities and notify the members of the sunset committee of this position. The motion was seconded and carried.**

XIV. REQUEST FOR FUNDING FOR PKU TESTING. The Pediatric Society requested the State Medical Association to introduce legislation to appropriate money for PKU testing.

Pros

1. PKU testing is mandated by law.

Cons

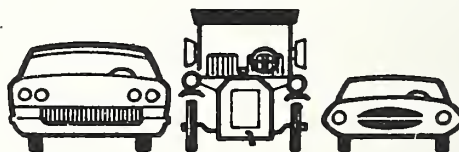
1. Because of short hospital stays, PKU tests may be invalid and must be done again following hospital dismissal.
2. PKU testing should be judgmental decision of physician and not mandated.

Dr. Lang moved that the State Medical Association not introduce legislation appropriating money for PKU testing. The motion was seconded and carried.

XXV. CHILDREN'S COMPREHENSIVE HEALTH CARE SERVICE PROGRAM. Dr. G. Robert Bell reviewed a situation whereby he provided services to a child under this program and was then informed that he could not be reimbursed for additional services rendered inasmuch as he was not a board certified specialist. It was also brought to the Council's attention that contracts for this program are being sent to physicians in South Dakota and only those signing these contracts will be reimbursed. **Dr. Harris moved that the Advisory Committee to the Children's Comprehensive Health Care Service Program be apprised of the questions regarding contracts and the requirement that only specialists be reimbursed for services provided and encouraged to resolve these problems. The motion was seconded and carried.**

XXVI. RESIGNATION OF WILLIAM JONES, M.D. FROM THE COUNCIL. Councilors from the Black Hills District submitted Dr. Jones' resignation to the Council and indicated that a recommendation for his replacement will be forthcoming. **Dr. Taylor moved that the Council commend Dr. Jones for his service on the Council. The motion was seconded and carried.**

The meeting adjourned at 1:30 p.m.



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"Doctor Jeckel and Doctor Greed"

Hometowns

Everyone has a few favorite places and may have a home town or a favorite town or a town where they have been treated in such a fashion that fond memories are a result. Wessington, South Dakota is such a place. For all those people who live or come from Wessington or the surrounding ranch and farm country I would congratulate them on a community which has such a glowing enthusiasm and friendliness toward other people. Sometimes a small town can be very provincial in attitude not caring to risk an open contact with outsiders.

There is a place south of Wessington in the hills which is known as Rosehill Lake and to those of you who have seen this place I hope this following poem will have some meaning. This particular poem is dedicated to Tony and Eva Fischer of Wessington and in a way to all of the people who live in this area.

A bit of colloquial mystique comes with the description of the Rain Crow whose name is self explanatory. This vague bird is referred to by the local farmers and inhabitants of the Wessington area sometimes with tongue in cheek and sometimes with straight-forward sincerity. While visiting this area I have often listened for this bird, borrowing enthusiasm from the believers. I have not heard it but I will continue to listen for it.

I cannot help feeling that Jo Gross may have some rekindled memories as a result of these two poems. She often wondered why I chose Wessington as an adopted favorite town. Maybe this month's column will hold the answer. There is one thing sure. The election did not change Rose Hill Lake.

Rose Hill Lake

What place is this in Spring?
What place is this in Fall?
That does in truth my
Heart and soul enthrall?

Amongst the rolling hills of grass;
Where sky and earth embrace;
It holds my heart for all, alas!
In every thought and word of grace.

In Wessington hills midst seas of grass;
From year to year, the timeless change;
As seasons come and seasons pass;
In Spring the blue bells wave their lapis heads
And golden rod, milkweed and crocus fairly range
On sun touched hillside and shallow glen
Where beauty, love and friends begin.

Grape leaves hide the truckl'd brook
From view above through oak leaf shroud
No sound of voice or incipid crowd
Doth pierce these woods at waters edge;
Where turkey school their young at fledge.

The blue bell spake first to sun and sky;
Before man named it to its fame.
And on these hills He wrote a name
Enduring and loved to those who came
To keep that legacy of peace and beauty same.

As close to heart and mind can dwell
To things of man and God alike
To these my pride and joy doth swell
To keep enshrined our Rose Hill dell.

The ageless wear of nature's care
Shows naught to each in frames of time;
But tells the world times' passing fair;
And man made things have their decline.
When bricks tumble and eyes grow dim;
Return again to Rose Hill Lake
To reach that state of mind peace doth make.

© Winston Bryant Odland

Dedicated to Eva and Tony Fischer

Rain Crow

Rain Crow, Rain Crow!
I hear your plaintive cry flow;
O'er the grassy hills
And through the fertile glens;
I hear you e'er the rain begins.

Rain Crow, Rain Crow, mysterious bird;
Never seen, seldom heard.
Oh, mystic, evasive bird!
Some can hope in vain
To hear you sing before the rain.

A sign of hope in deep summer's drought;
Your welcome voice a boon, no doubt
When hope of rain is dead,
That spectre bird the Rain Crows' fled
And drought goes on.

How can you see the Rain Crow?
You ask to me—
Can I expose its mystery?
Oh, I'll tell you how, you can try.
You must believe not knowing why.

Rain Crow, Rain Crow enigmatic, prophetic friend
Herald of showers with hope to lend
I hear your tri-phonetic sound with unstrained ears
A skill well taught by passing years
Oh, years which taught patience, faith and cheer
To accept your whimsical existence clear.

To those who scoff at nature's whim
To Him who taught the fish to swim
A world apart, these two, and distance fro
The first will never hear the Crow.

Rain Crow, Rain Crow
Oh, somehow we know
You must be near as rain drops fall
On dusty roads, on wheat heads tall,
On shrinking pond and on calloused hand
Rain Crow, feathered favorite of the land.

© Winston Bryant Odland

To Melissa Ross

LETTER TO THE PROVIDERS IN SOUTH DAKOTA

A grant has been awarded to the South Dakota Foundation for Medical Care by the Secretary of Health, Education and Welfare to continue as the Professional Standards Review Organization for the State of South Dakota pursuant to Section 11.52 (A) to review health care services and items provided in designated hospitals to persons eligible for benefits which may be paid for under the Medicare, Medicaid and Maternal and Child Health and Crippled Children's Programs funded under Titles XVIII, XIX and V of the Social Security Act. Individual files of providers will be located at South Dakota Foundation for Medical Care office at 608 West Avenue North, Sioux Falls, South Dakota 57104.

Individual providers may have access to their individual information. The South Dakota Professional Standards Review Organization will provide health care practitioners and facilities, upon written request and payment of production or reproduction costs, copies of their individual PSRO data and information; permit such data to be corrected or amended where existing data is demonstrably incorrect; permit the physician of record or his designee, upon written request, to be present when a patient has access to his or her individual file.

Information may be disclosed as it pertains to sanction proceedings in which case the South Dakota PSRO will notify the provider in writing at least 10 working days prior to such disclosure to permit the practitioner or provider if he/it wishes, to submit a statement to accompany the disclosed files and reports.

For purposes of federal and state program monitoring, review and evaluation privileged data and information may be only accessed by onsite visits to the PSRO or other components of the PSRO review system in which the privileged data and/or information is stored. All privileged information and data needed for monitoring and program review purposes must contain all personal identification in a coded form.

Non-privileged data and information acquired and/or generated by any PSRO, its agents, or ancillary components supporting PSRO review which is uniquely identifiable to a given health care facility may be disclosed upon request and payment of a fee to cover the expense of copying the requested information. However, the health care facility must be notified in writing 30 days prior to disclosure to permit the facility to review the information for accuracy and to provide comments to accompany the disclosed information.

Reports generated by the PSRO containing information required by federal agencies in their monitoring and program review capacity are considered to come under the Freedom of Information Act and once received by the Department of Health Education and Welfare are subject to its disclosure provisions.

Additional information may be obtained by contacting South Dakota Foundation for Medical Care, 608 West Avenue North, Sioux Falls, SD 57104, Attention: L. Paul Jensen, Project Director.

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